



**BOARD OF TRUSTEES’  
RESEARCH AND ECONOMIC  
DEVELOPMENT COMMITTEE  
AGENDA AND MATERIALS**

**May 10, 2023  
1:00 – 3:00 p.m.**



**RESEARCH AND ECONOMIC DEVELOPMENT COMMITTEE**  
**COMMITTEE MEETING MATERIALS**

**AGENDA ITEM TITLE: Presentation – Social Science Research Presentations – Parag Chitnis**

- PUBLIC SESSION
- EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:

- Yes
- No

FOR FULL BOARD CONSIDERATION:

- Yes *[Note: If yes, materials will also be included in the full UW Board of Trustee report.]*
- No

*Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:

In every in-person meeting of the Research and Economic Development Committee of the UW Board of Trustees, research presentations in certain areas of UW’s research enterprise are included. For May’s meeting a variety of Social Science student researchers have been invited to present their current and planned research. Summaries of presentations are attached.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:

N/A

WHY THIS ITEM IS BEFORE THE COMMITTEE:

Informational

ACTION REQUIRED AT THIS COMMITTEE MEETING:

N/A

PROPOSED MOTION:

N/A

- a. **Lindsay Gillikin** Advisor: Dr. Kyle De Young  
“Minority Stress and Binge Eating”

Lindsay’s program of research examines: 1) Why are sexual and gender minority (SGM) populations at increased risk for eating disorders? 2) What are the risk/protective factors for eating disorders among SGM individuals? 3) What are the biological underpinnings of minority stress? Lindsay will describe her previous research examining whether emotion regulation explains increased eating disorder risk among SGM individuals. Finally, she will summarize her plans for future research, including 1) an online study testing whether emotion regulation protects against binge eating among SGM individuals, and 2) an experimental study testing whether minority stress leads to increased biological stress responses and subsequent food consumption.

- b. **Charles Koenig** Advisor: Dr. Todd Surovell  
“Earth Oven Experiments for *Agave Lechuguilla*”

Earth ovens are semi-subterranean cooking features used by Indigenous peoples across the world to cook plants and animals. In the Lower Pecos Canyonlands of southwest Texas, Indigenous peoples used earth ovens to cook a variety of plant foods, but one plant that was frequently cooked was *Agave lechuguilla*. To gain a better understanding of the role of earth ovens and *lechuguilla* within Indigenous lifeways, a series of experimental ovens were constructed to determine how oven cooks may have minimized construction costs and maximized the number of cooked *lechuguilla*. This presentation describes the results of the experimental earth oven research.

- c. **McKenna Litynski** Advisor: Dr. Todd Surovell  
“Microfauna Analysis at the La Prele Mammoth Site: Implications for Clovis Diets and Paleoenvironments”

Researchers have traditionally associated Clovis tradition technology with a specialization in large game, but ongoing debates concerns the significance of a variety of prey, including microfauna, in Clovis diets. This master’s thesis advances current understandings of the Clovis tradition through analyzing the microfauna collections at the La Prele Mammoth site (48CO1401). Traditional zooarchaeological techniques provide the opportunity to analyze taxa, skeletal element representation, burning distributions, and spatial density analyses based on distances away from hearth features. Zooarchaeology by Mass Spectrometry (ZooMS) illuminates the potential of identifying microfauna taxa from fragmentary bone sites like La Prele. Furthermore, microfauna analysis reconstructs paleoenvironments approximately 12,900 years ago at La Prele.

**d. Connor Magnuson**

Advisor: Dr. Linda Thunstrom

“Experimental Economics and Understanding the Gender Wage Gap”

In this presentation today, two studies will be presented: (1) Role and the Gender Wage Gap and (2) Uncertain Levels of Competition. The first study examines whether the observed gender differences in negotiation returns might be explained by women responding differently to roles (employer versus employee) in the labor market. This study found that female subjects assigned the employee role negotiated lower outcomes and responded to role framing and entitlement by changing their assertiveness and reported risk preferences. The second study examines how uncertainty about the level of competition a job applicant faces changes behavior. This study finds that subjects facing uncertainty accept lower offers than those who know the level of competition they face.

**e. Sam Spoor**

Advisor: Dr. Kyle De Young

“Constructing a Biopsychosocial Theory of Food Insecurity and Eating Disorders”

a. The focus of this talk is on my research program studying eating disorder pathology in the context of food insecurity, as well as how my proposed NSF study fits into the scope of this work. The NSF is specifically focused on (1) explaining the relation between food insecurity and executive dysfunction among college students, and (2) identifying dynamic within and between-day associations between food insecurity, executive functions, and chronobiological factors such as sleep and eating pattern.

RESEARCH PRESENTATION

# Minority Stress and Binge Eating

Lindsay Gillikin, B.A.

Clinical Psychology PhD Student

Advisor: Kyle P. De Young, Ph.D., FAED



College of Arts and Sciences  
Department of  
Psychology

# Professional Background



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ARTS AND SCIENCES



College of Arts and Sciences  
Department of  
Psychology

## Undergraduate Degree

- Psychology (B.A.)
- Women's, Gender & Sexuality Studies (B.A.)

## Clinical Psychology PhD student

- Eating Behaviors Lab
- Advisor: Dr. Kyle De Young

2019–2022



Graduate  
Research  
Fellowship  
Program

2015–2019



2022 – Present



DREXEL UNIVERSITY  
Center for  
**Weight, Eating and  
Lifestyle Science**  
*College of Arts and Sciences*

## Research Coordinator

- Binge-eating treatment trials for adults and adolescents
- Ecological momentary assessment studies

# Sexual and Gender Minority (SGM) Individuals

Individuals who do not identify as cisgender and/or heterosexual

This includes individuals who identify as:

- Gay
- Lesbian
- Bisexual
- Nonbinary
- Transgender
- Asexual
  
- (And many others)

# Sexual and gender minority (SGM) individuals experience higher rates of

## Physical health problems:

- Cardiovascular disease
- Arthritis
- Inflammation

## Mental health problems:

- Suicidality
- Non-suicidal self injury
- Depression
- Anxiety
- Substance use
- Eating disorders

# SGM Individuals Experience Higher Rates of Eating Disorders

## Eating Disorders Behaviors:

Binge eating

Weight control behaviors

- Self-induced vomiting
- Overexercise
- Appearance and Performance-Enhancing Drug Use

## Eating Disorder Diagnoses:

Binge-Eating Disorder

Bulimia Nervosa

Anorexia Nervosa

Other Specified Eating and Feeding Disorder

## My Line of Research:

Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?

"Couldn't stop eating"

# Binge Eating

"Like a ball rolling down a hill"

Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than most people would eat in a similar period of time under similar circumstances

The sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating)

"Felt out of control"

"Compelled to keep eating"

"What if I don't pass the class?"

"Food will make me feel better"

## Stressor

Low grade on an exam

## Negative Emotions

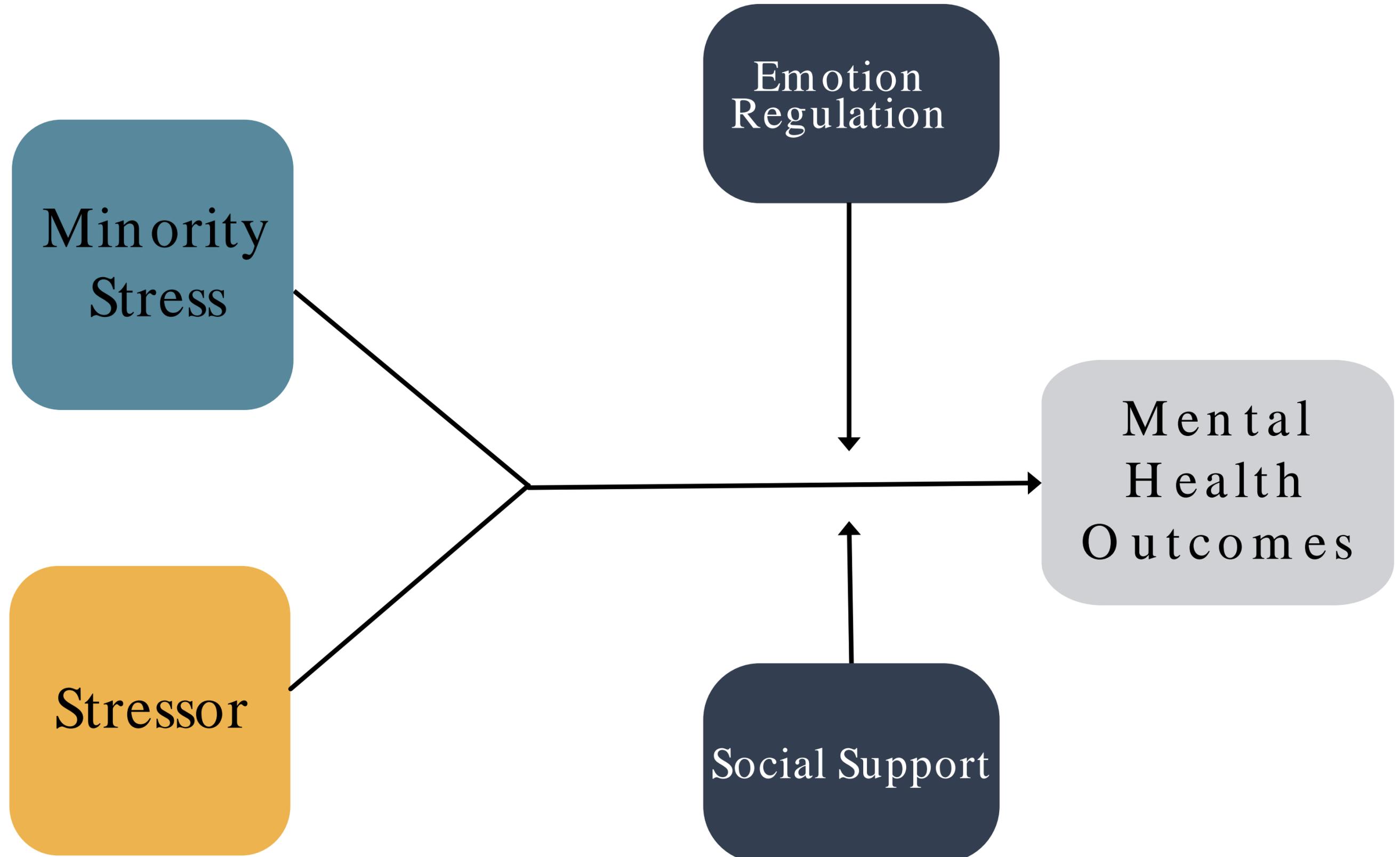
Shame, anxiety, worry

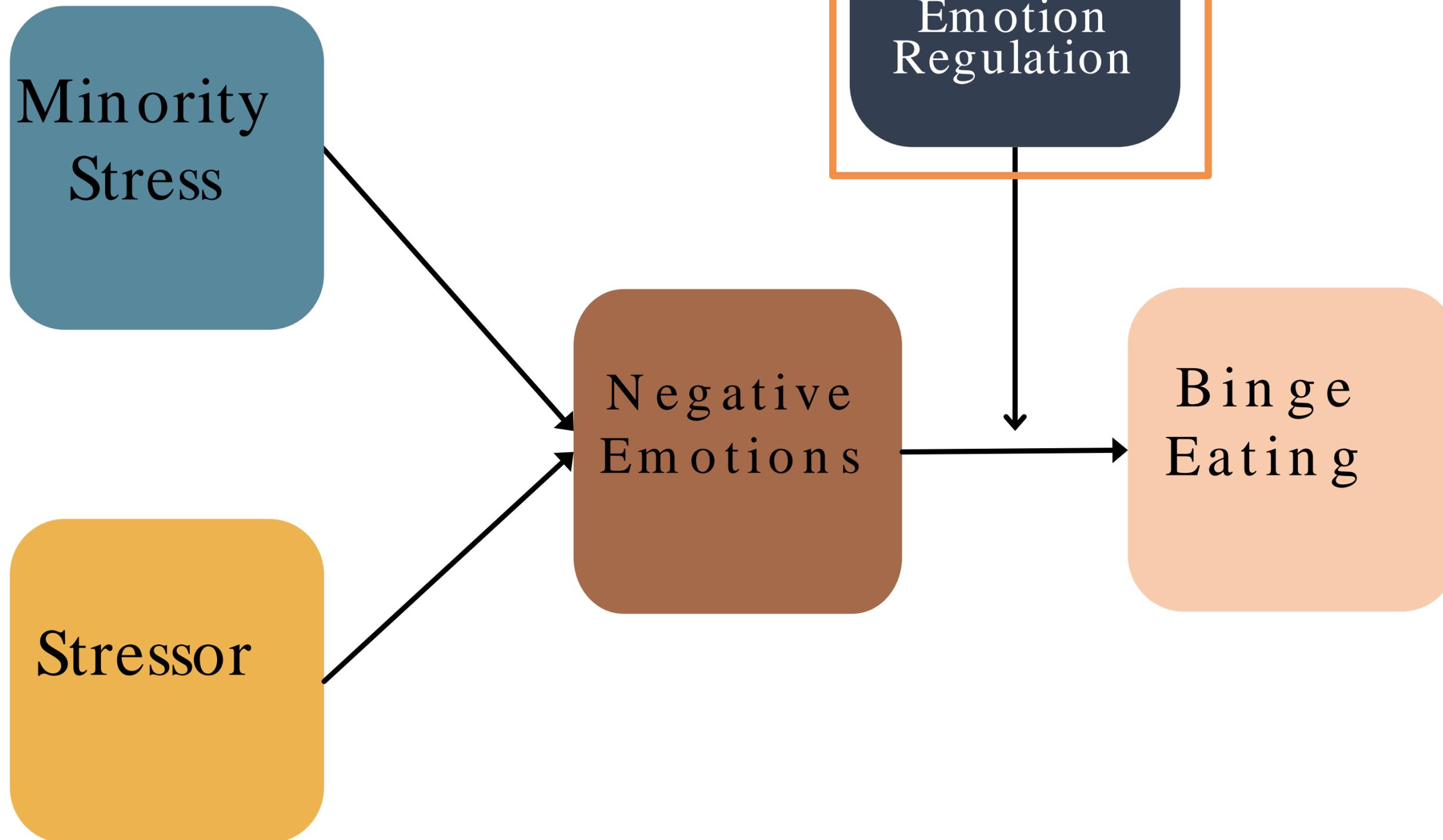
## Binge Eating

Overeating +  
Feeling out of control

"I'm a failure"

"I deserve this"





## Study 1: Undergrad Thesis

Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?

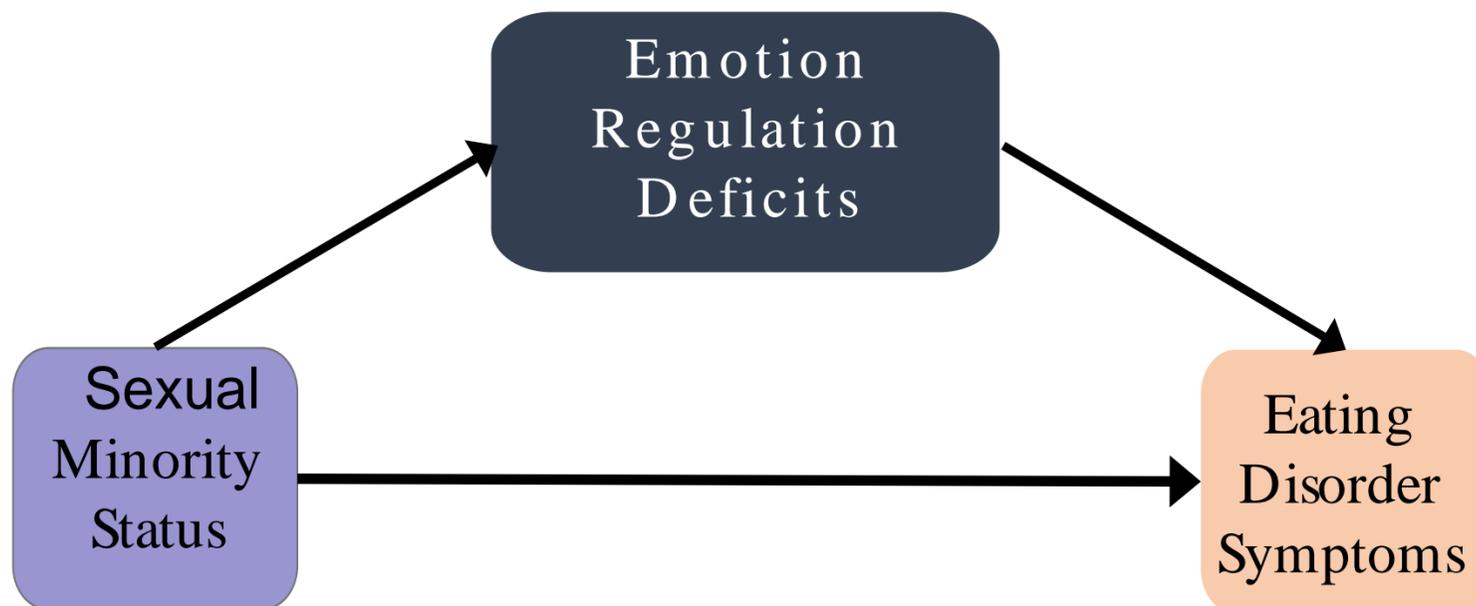
# Study Design

## Participants

N=195 sexual minority adults  
N=194 heterosexual adults

## Procedures

Online self-report survey at  
one timepoint



## An examination of emotion regulation as a mechanism underlying eating disorder pathology in lesbian, gay, and bisexual individuals

Lindsay M. Gillikin<sup>a, b</sup>, Stephanie M. Manasse<sup>a</sup>, Ilana Seager van Dyk<sup>b, c</sup>

Show more

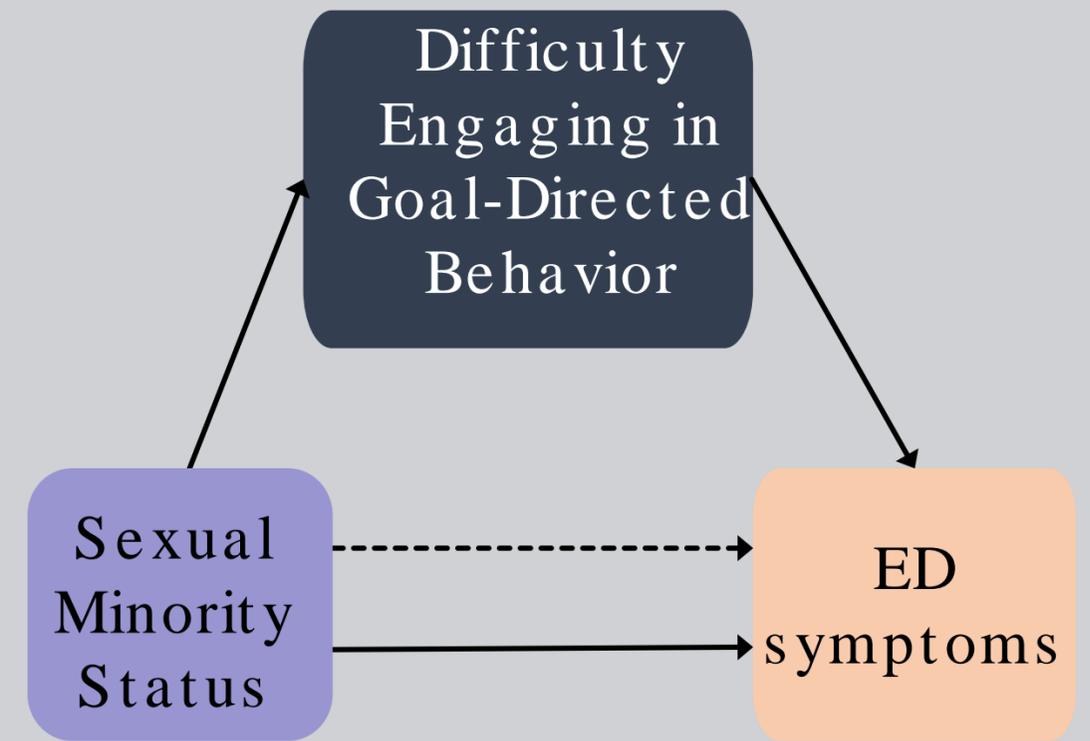
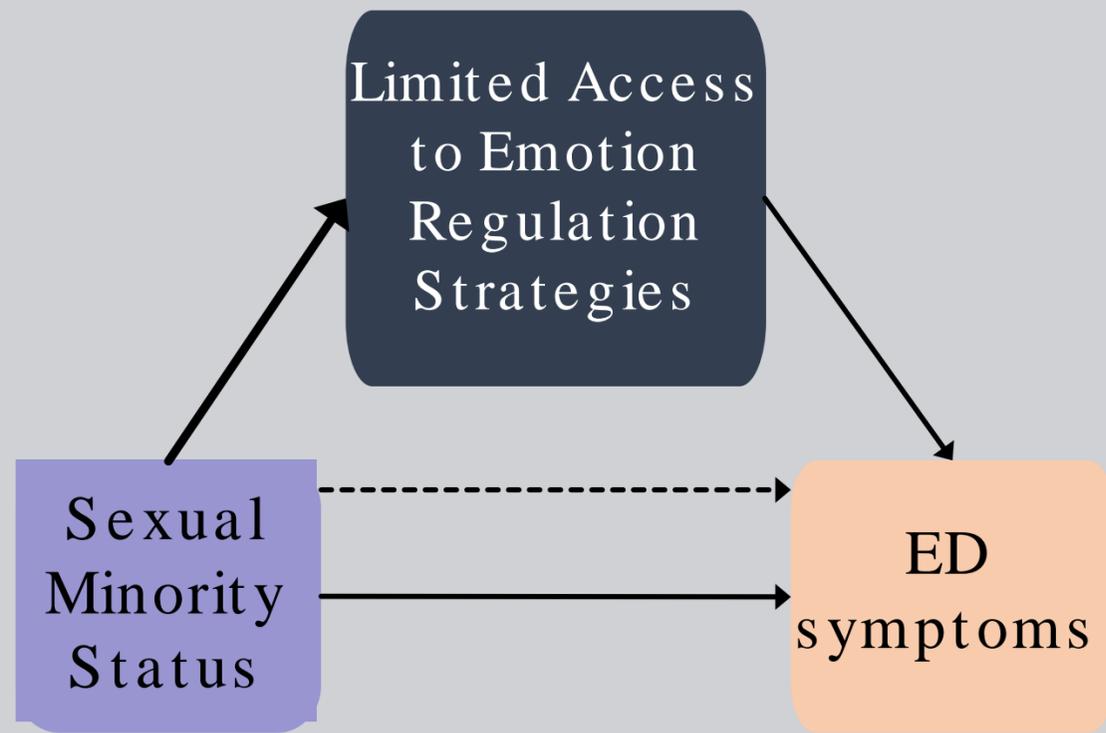
+ Add to Mendeley Share Cite

<https://doi.org/10.1016/j.eatbeh.2021.101508>

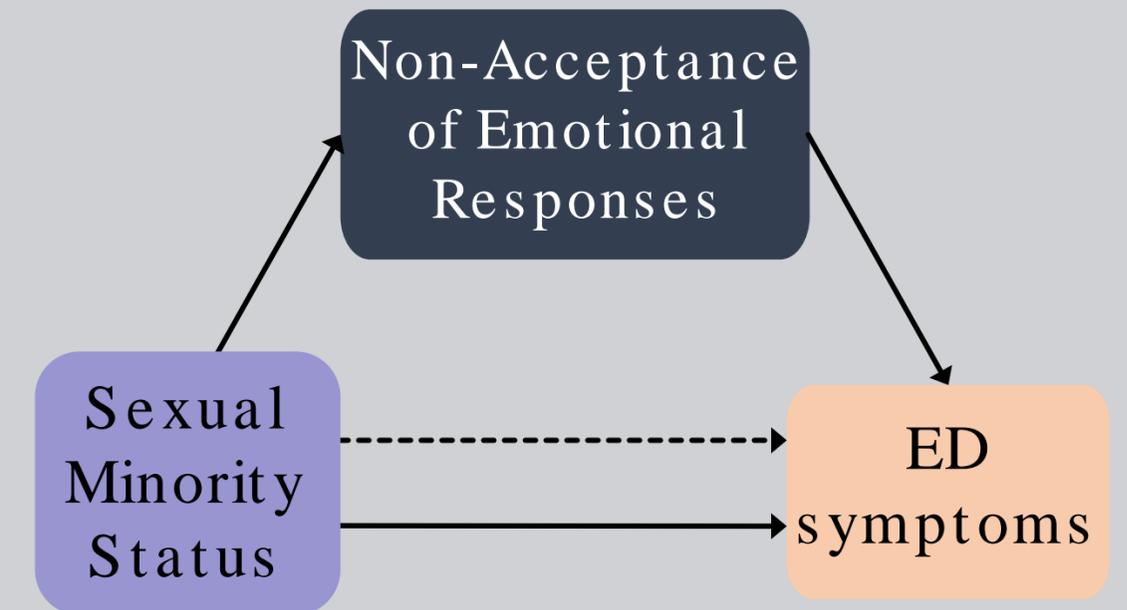
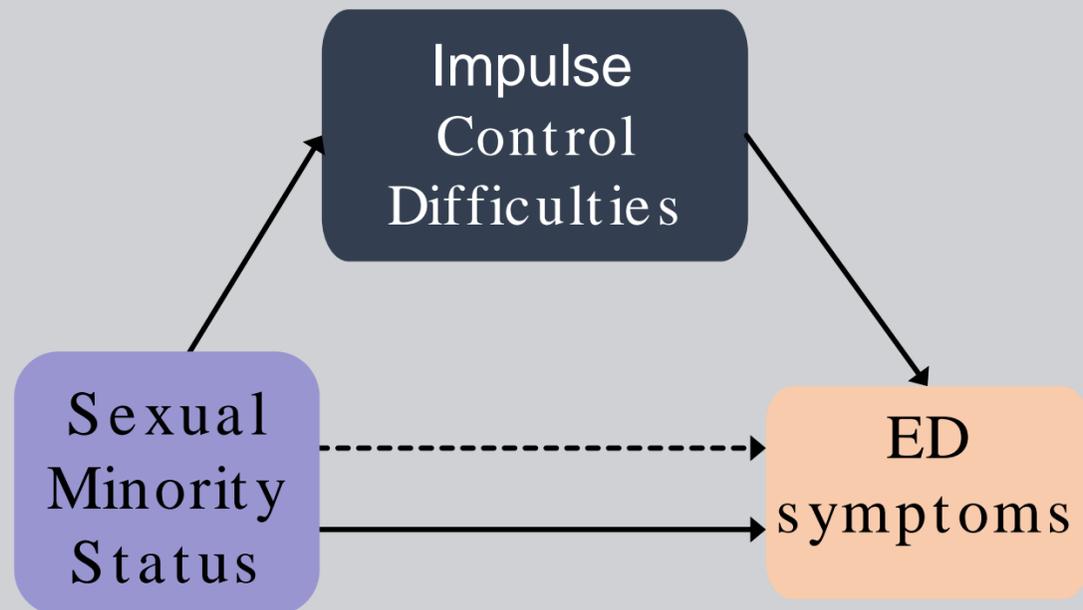
Get rights and content

### Highlights

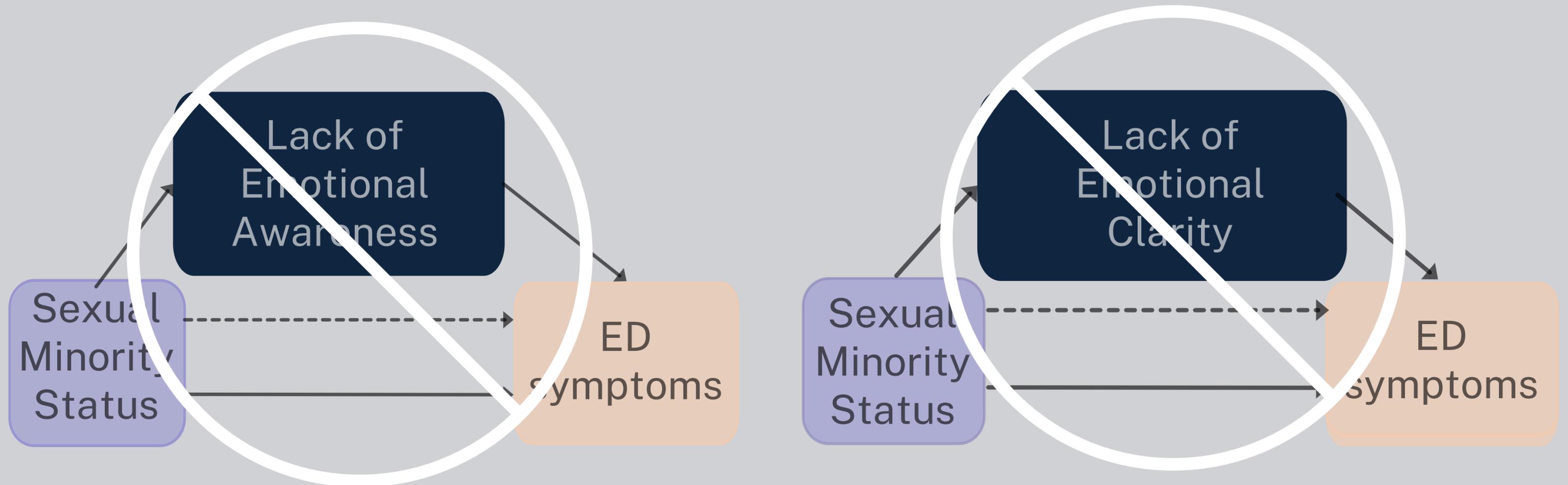
- LGB individuals reported higher eating pathology than heterosexual individuals
- LGB individuals reported higher levels of maladaptive emotion regulation compared to heterosexual individuals
- Emotion dysregulation may partially explain the increased risk of eating pathology in LGB individuals



Emotion regulation deficits specific to response to negative emotional experiences partially explained increased ED symptoms among SGM participants



# Emotion regulation deficits specific to identifying and understanding emotional experiences were not related



## Study 2: Master's Thesis

Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?

Anticipated Start: Fall 2023

# Study Design

## Procedures

Online self-report survey at one timepoint

## Participants

N=172 SGM adults

## Research Questions:

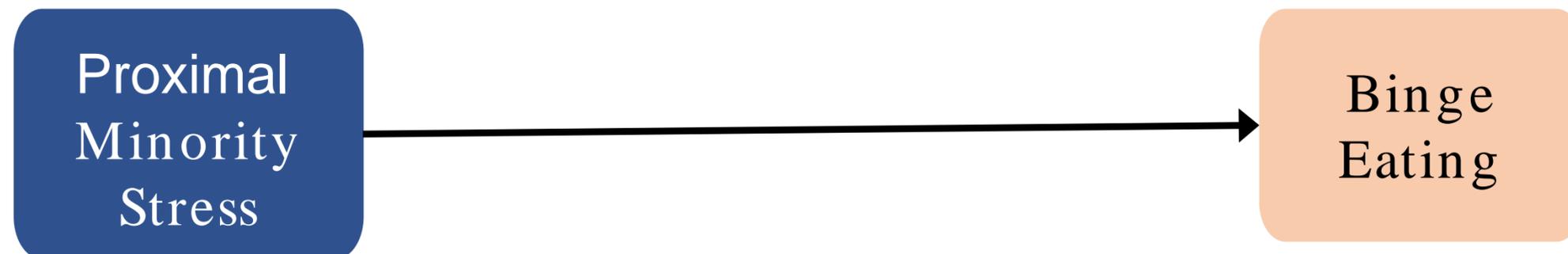
Is proximal minority stress associated with increased binge eating?

Does emotion regulation serve as a protective factor?

## Hypotheses:

1.) Proximal minority stress will be associated with binge eating

2.) Emotion regulation will change the strength of the relationship between minority stress and binge eating



Anticipated Start: Fall 2023

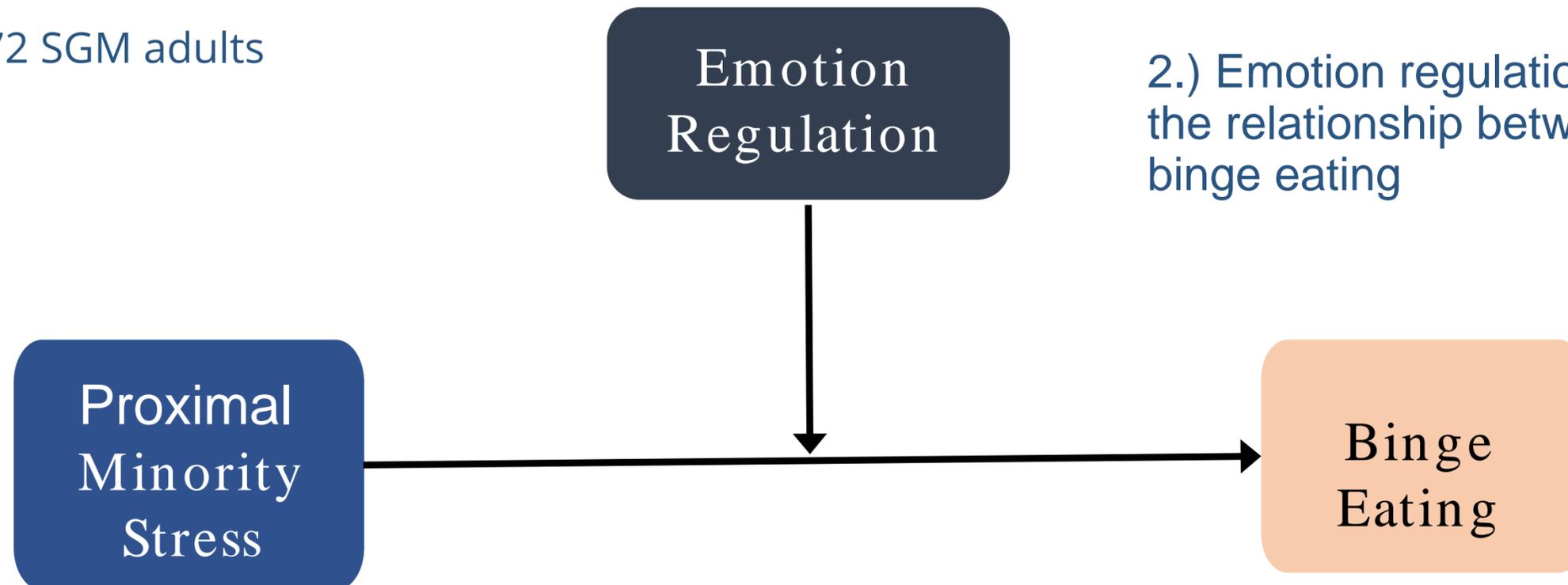
# Study Design

## Procedures

Online self-report survey at one timepoint

## Participants

N=172 SGM adults



## Research Questions:

Is proximal minority stress associated with increased binge eating?

Does emotion regulation serve as a protective factor?

## Hypotheses:

1.) Proximal minority stress will be associated with binge eating

2.) Emotion regulation will change the strength of the relationship between minority stress and binge eating

Anticipated Start: Fall 2023

## Study 3: NSF GRFP Project

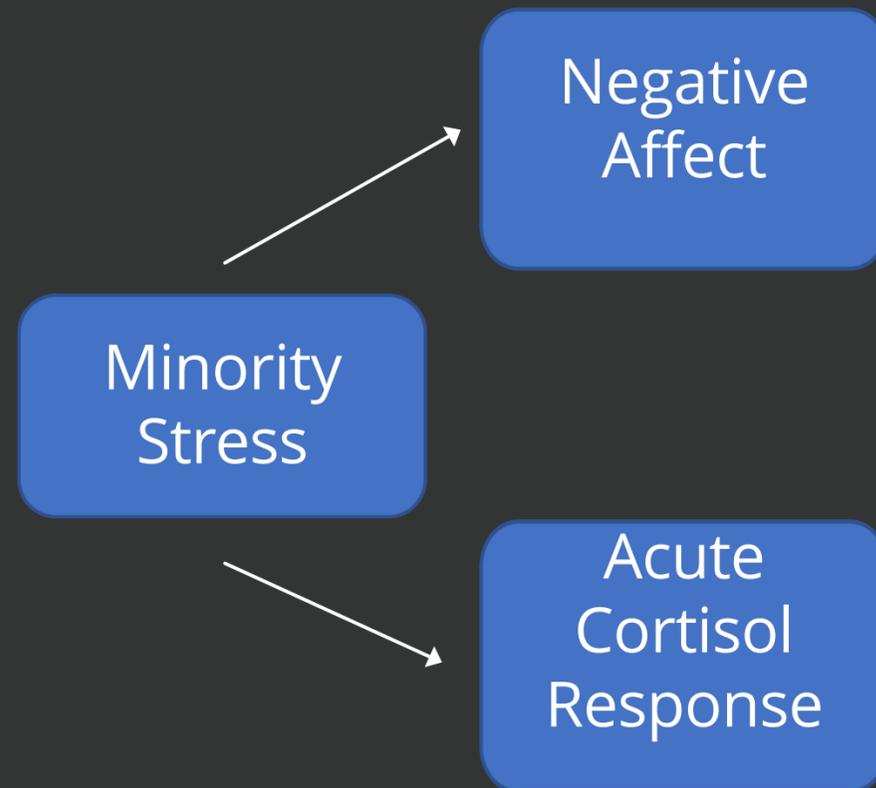
Why are SGM populations at increased risk for eating disorders?

What are the risk/protective factors?

What are the biological underpinnings?

Anticipated Start: Fall 2023

# Aims and Hypotheses



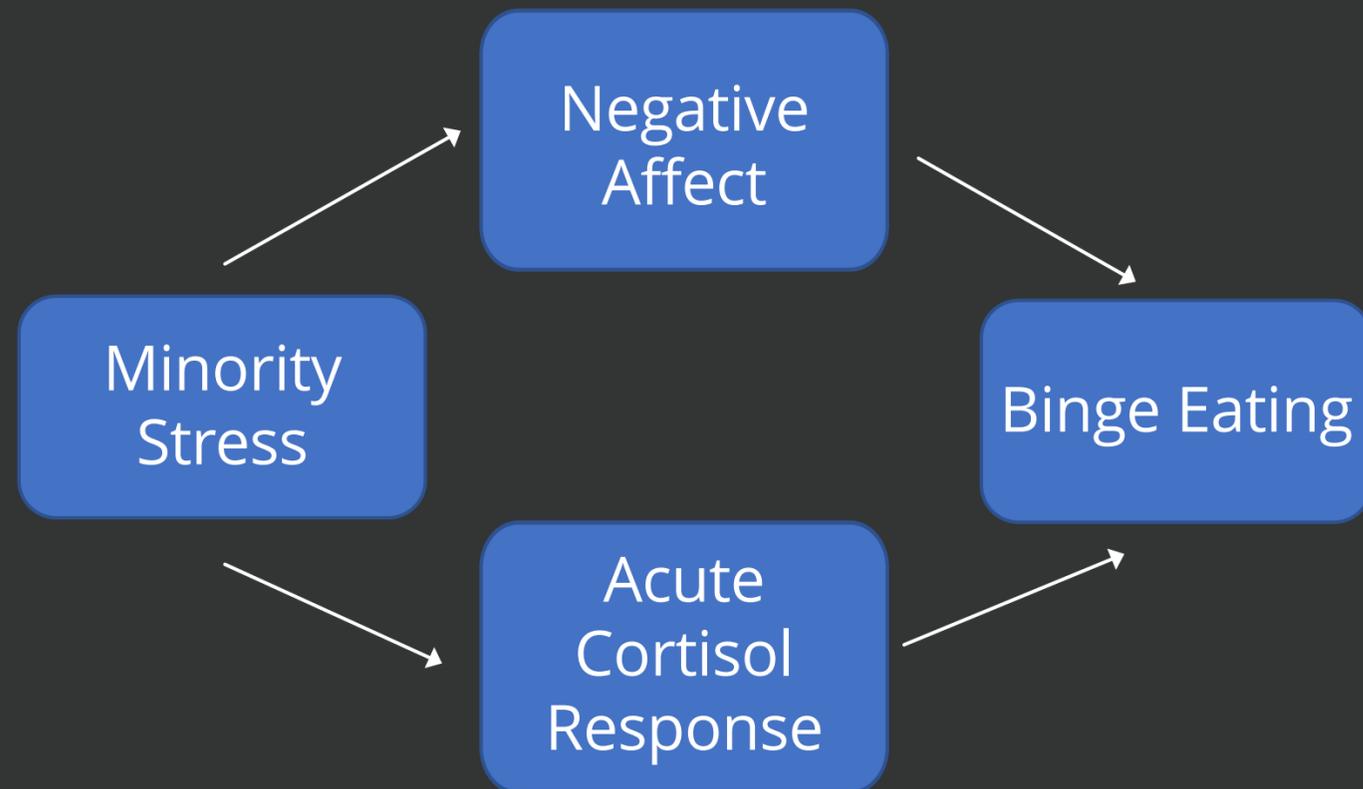
## Research Questions:

1. Does minority stress predict heightened acute cortisol response and negative affect?

## Hypotheses:

1. Minority stress will predict increased ACR and negative affect.

# Aims and Hypotheses



## Research Questions:

1. Does minority stress predict heightened acute cortisol response and negative affect?
2. Do these two parallel processes predict increased binge eating?

## Hypotheses:

1. Minority stress will predict increased ACR and negative affect.
2. Increases in ACR and negative affect following the minority stress induction will predict greater food consumption

Anticipated Start: Fall 2023



12h fast

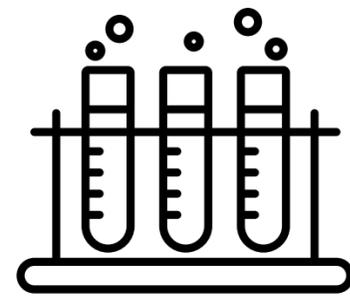


Arrive for  
in-person visit

Informed  
Consent



Preload



Saliva  
Samples



Affect  
ratings



Minority Stress  
Induction

Saliva samples will measure acute cortisol response - a metric of physiological stress



12h fast



Arrive for  
in-person visit

Informed  
Consent



Preload

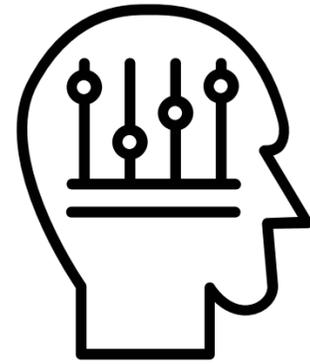
Saliva Samples

Affect ratings

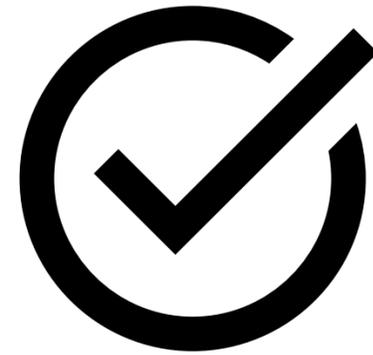


Minority  
Stress  
Induction

Interview task - half of participants  
will receive a minority stress  
induction version



Visual Analog Scales



Manipulation  
Check



Test Meal

Participants will be asked "What do you remember about the interview?"

# Thank you!



Eating Behaviors Lab (University of Wyoming)

## Mentors and Collaborators:

Kyle De Young, PhD, FAED  
Department of Psychology, University of Wyoming



Iana Seager van Dyke, PhD  
Department of Psychology, Massey University  
Formerly: Ohio State University



Stephanie Manasse, PhD  
Center for Weight, Eating & Lifestyle Science  
Department of Psychology, Drexel University



College of Arts and Sciences  
Department  
of Psychology

# References

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Brooks, V. R. (1981). *Minority stress and lesbian women*. Free Press.

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Lipson, S. K., Raifman, J., Abelson, S., & Reisner, S. L. (2019). Gender minority mental health in the US: Results of a national survey on college campuses. *American journal of preventive medicine*, 57(3), 293-301.

Marchi, M., Arcolin, E., Fiore, G., Travascio, A., Uberti, D., Amaddeo, F., ... & Italian Working Group on LGBTIQ Mental Health. (2022). Self-harm and suicidality among LGBTIQ people: a systematic review and meta-analysis. *International review of psychiatry*, 34(3-4), 240-256.

Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: conceptual issues and research evidence. *Psychological bulletin*, 129(5), 674.

Nagata, J. M., Ganson, K. T., & Austin, S. B. (2020). Emerging trends in eating disorders among sexual and gender minorities. *Current opinion in psychiatry*, 33(6), 562–567.

Pharr, J. R., Kachen, A., & Cross, C. (2019). Health disparities among sexual gender minority women in the United States: A population-based study. *Journal of Community Health: The Publication for Health Promotion and Disease Prevention*, 44(4), 721–728.

Questions?

# Earth Oven Experiments for *Agave Lechuguilla*

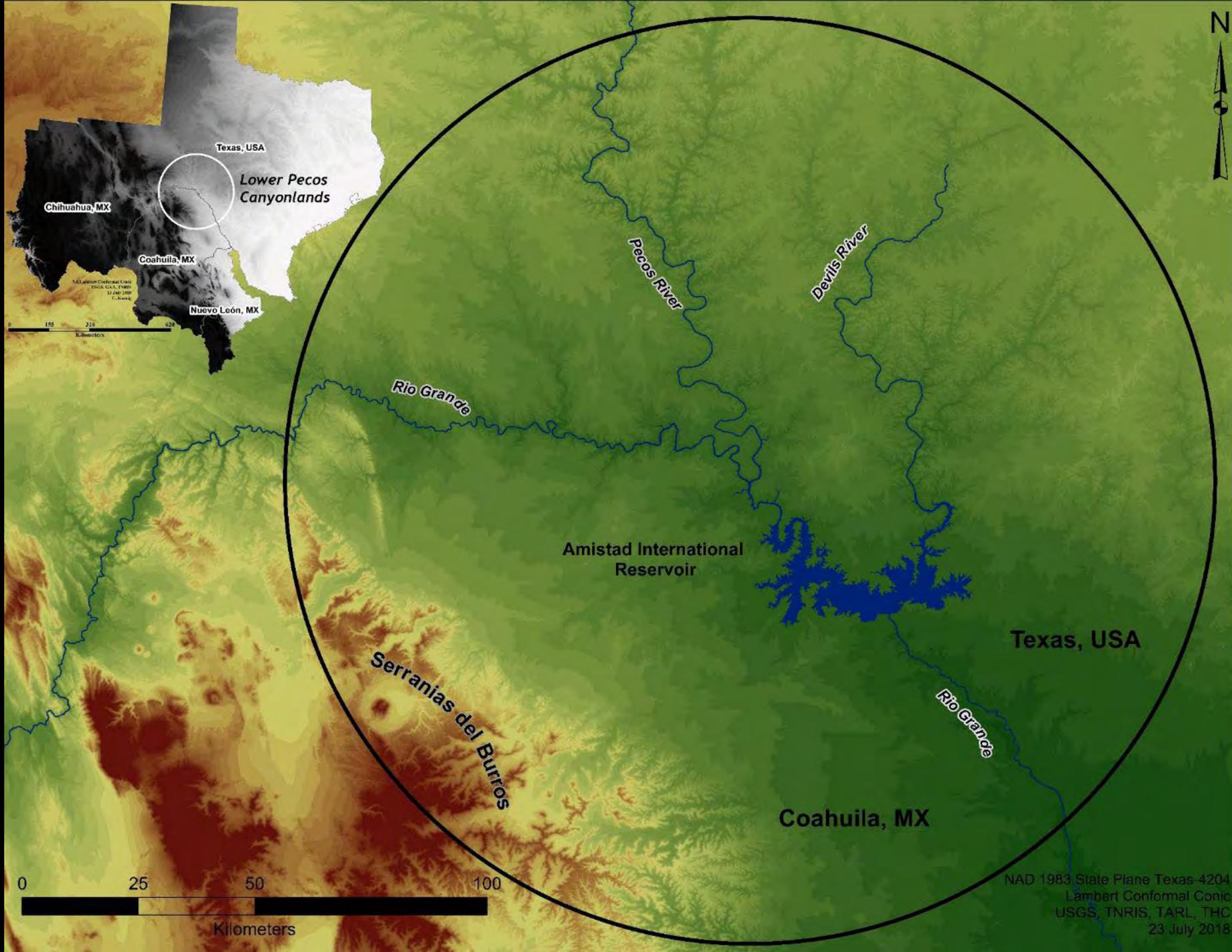
Charles W. Koenig  
PhD Candidate  
University of Wyoming  
Research and Economic Development Committee of the Board of Trustees  
May 10, 2023



A topographic map of the United States showing elevation contours. Two regions are highlighted in red: the Laramie region in the central-western US and the Lower Pecos Canyonlands in the southeastern US. The map uses a color gradient from green (low elevation) to brown (high elevation).

**\*Laramie**

**\*Lower Pecos Canyonlands**



Texas, USA  
Lower Pecos  
Canyonlands

Chihuahua, MX

Coahuila, MX

Nuevo León, MX

NAD 1983 State Plane Texas 4204  
Lambert Conformal Conic  
USGS, TNRS, TARL, THC  
23 July 2018

0 150 300 450  
Kilometers

Rio Grande

Pecos River

Devils River

Amistad International  
Reservoir

Texas, USA

Serranias del Burros

Coahuila, MX

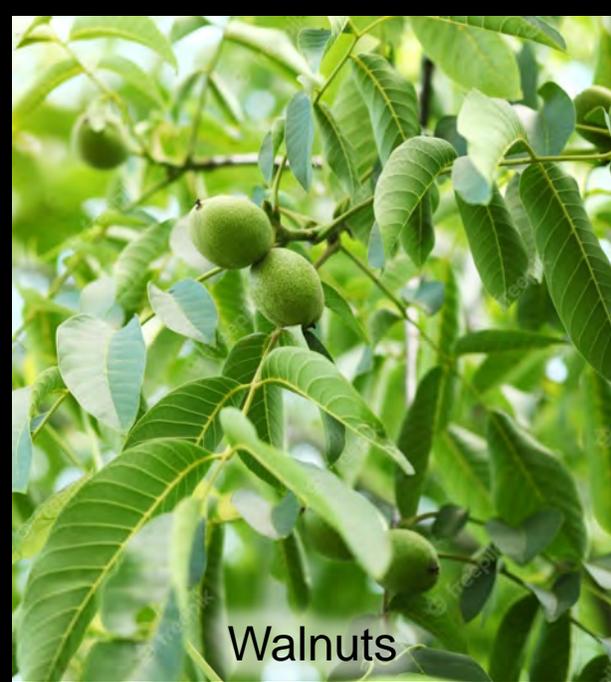
Rio Grande

0 25 50 100  
Kilometers

NAD 1983 State Plane Texas 4204  
Lambert Conformal Conic  
USGS, TNRS, TARL, THC  
23 July 2018

# 500+ Generations of Hunter-Gatherers





Walnuts



Mesquite Pods



Prickly Pear Fruit



Pecans



*Agave lechuguilla*



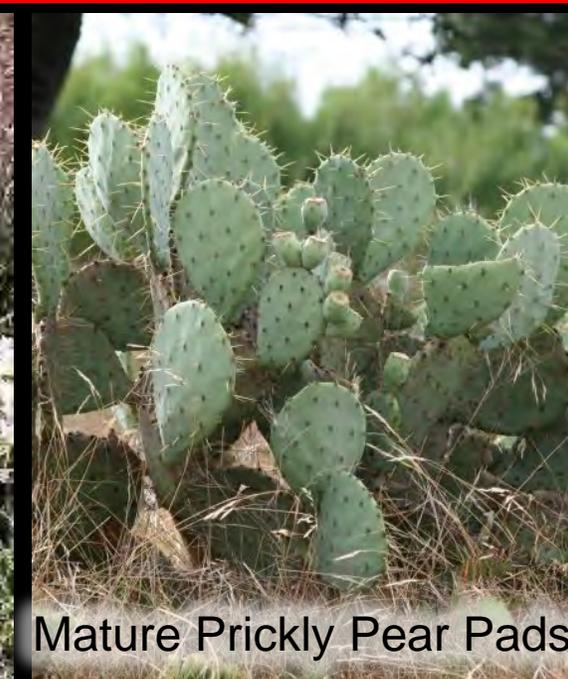
Sotol



Yucca



Onion



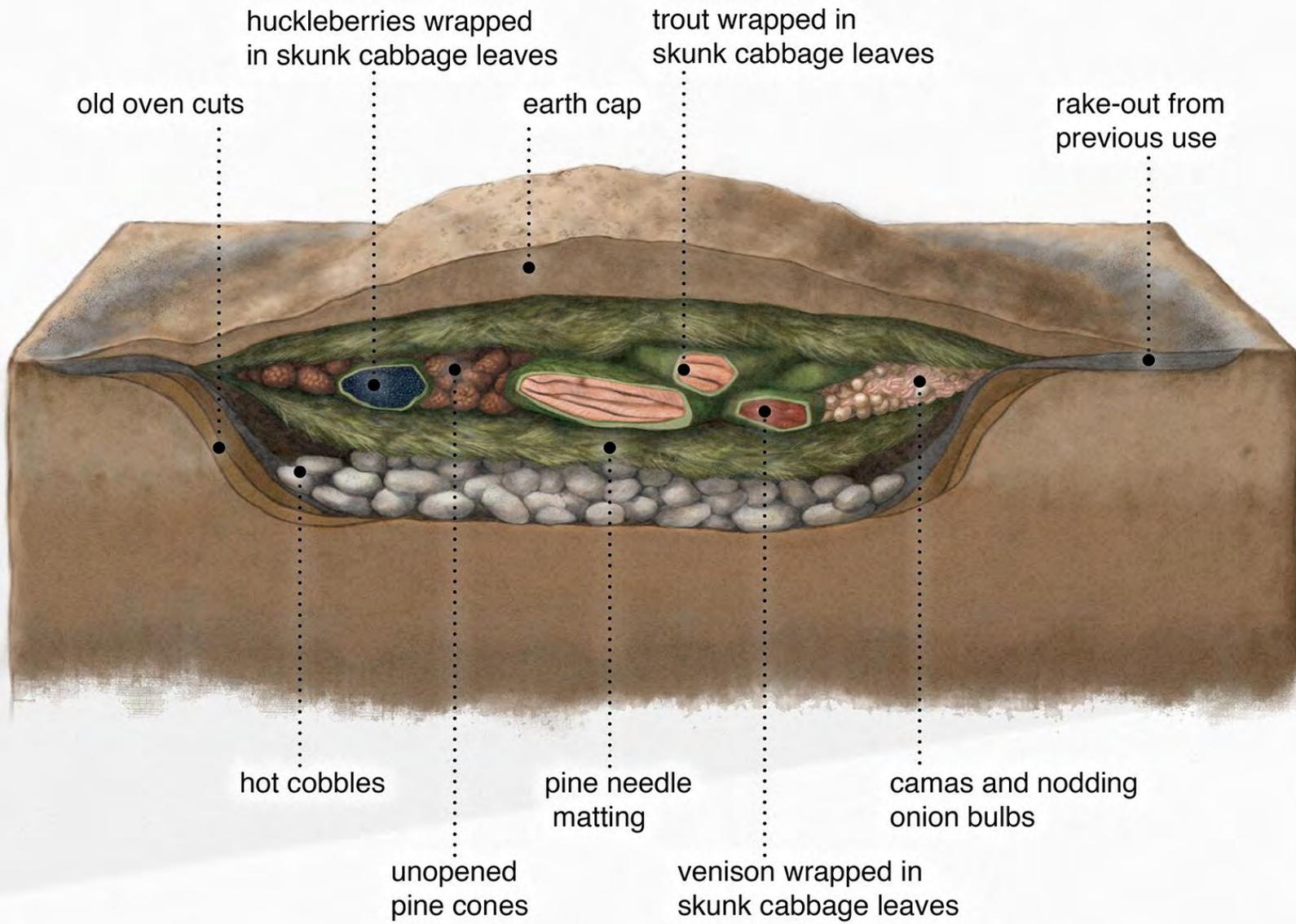
Mature Prickly Pear Pads



**Earth Ovens**



Sealed Oven





Lechuguilla "heart"

# AGAVE FESTIVAL MARFA



FOOD • FILM • MUSIC • SCIENCE  
SOTOL • TEQUILA • MEZCAL

*Understanding the role(s) of earth ovens—  
both economic and cultural—is paramount  
for studying LPC foragers.*

*We must understand how they work!*

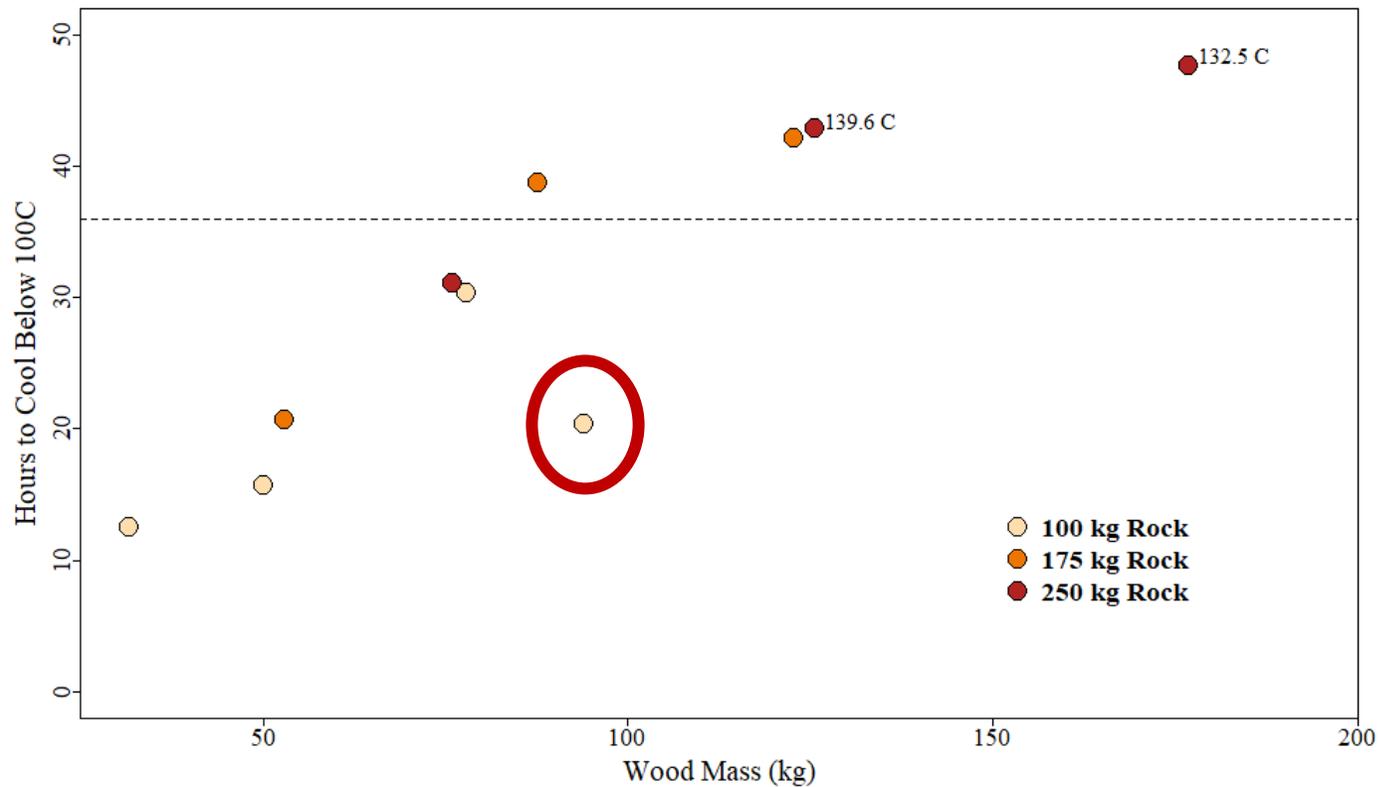


# Experimental Archaeology

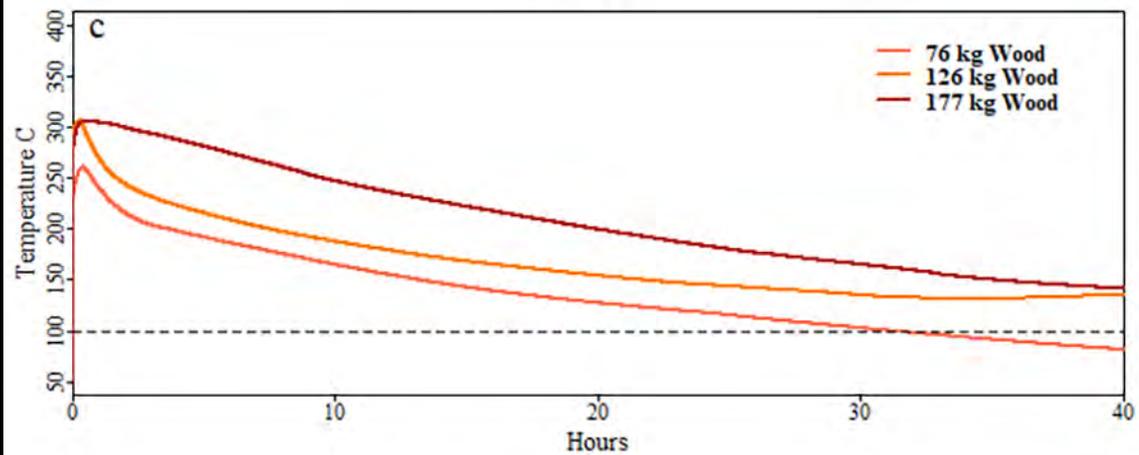
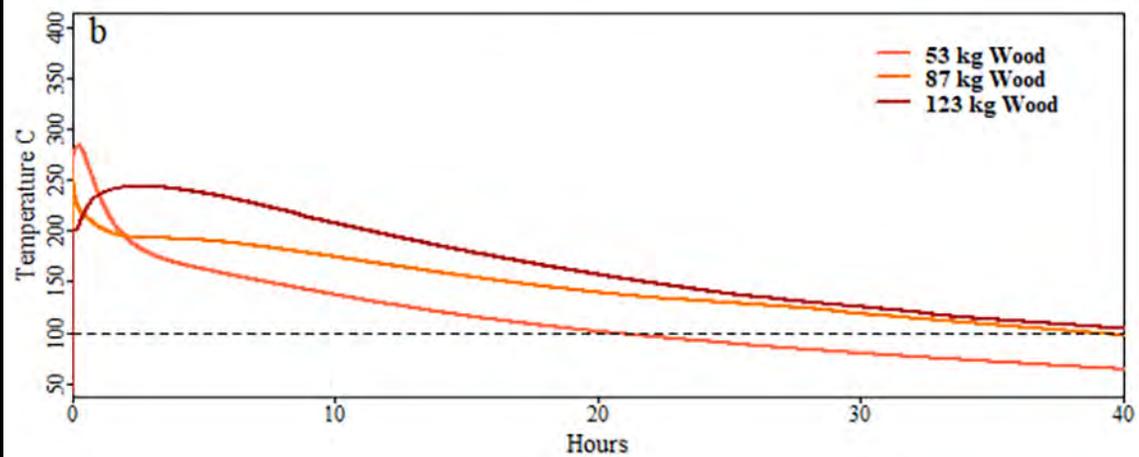
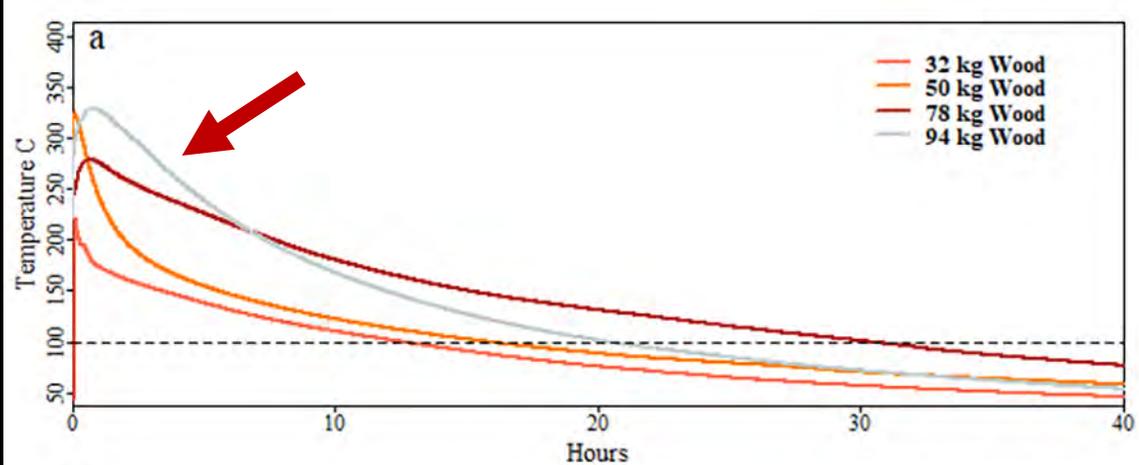
# Phase I: How Much Wood and Rock?

- Determine the minimum amount of wood required to maintain 100°C heating element for 36 hours.
- Three ovens with differing amounts of rock
  - 100 kg ( $n=4$ )
  - 175 kg ( $n=3$ )
  - 250 kg ( $n=3$ )
- Vary the amount of wood
  - 30%
  - 50%
  - 70%
  - 90%
- Measure Temperature Change





Regardless of rock mass, **minimum**  
**~90-100 kg fuel** for 36 hrs of thermal  
 energy



# Phase II: How Much Food?

- Determine how much lechuguilla can be cooked with less rock and wood
- Two ovens with differing amounts of rock and wood
  - 175 kg rock & 125 kg wood
  - 250 kg rock & 133 kg wood
- Differing number of plants
  - 30 plants (175 kg oven)
  - 62 plants (250 kg oven)





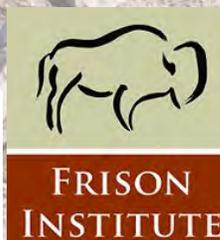
# Importance of Earth Oven Experiments

- Evaluating oven variability can expand our understanding of Indigenous economies
- Earth Ovens are communal features
- Importance of traditional knowledge



# Thank You!

- Missy Harrington
- Frison Institute, University of Wyoming
- Thomas E. Miller Research Endowment, Texas State University
- University of Wyoming Department of Anthropology
- University of Wyoming Arts and Sciences Paul Stock Foundation Travel Fund
- University of Wyoming Ellbogen Outstanding Graduate Assistant Teaching Award
- UW Graduate Student Community
- PhD Committee
- Many other colleagues, collaborators, friends, and family!!



# Experimental Economics and Understanding the Gender Wage Gap

Connor Magnuson

April 24, 2023

## Quick Note

I could not have completed any research without

- Advisors
- Fellow Graduate Students
- Generous Donations
  - Lowham RA Fellowship
  - Shelby Gerking Graduate Award in Economics
  - Bugas Research Award
  - Charles Mason Graduate Research Award

# Research Agenda

Applying a range of experimental tools to answer relevant questions that are focused on gender differences in wage outcomes.

# Wyoming Problem

**Problem:** Women in Wyoming make \$0.75 for every dollar earned by men [[Alexander and Jones-Ritten, 2023](#)]

- loss of \$1.5 billion loss to the Wyoming Economy

## Specific Problem Examined

Men receive higher returns to negotiation than women [[Card et al., 2015](#), [Jones Ritten et al., 2020](#)] driving  $\approx 30\%$  of the wage gap [[Säve-Söderbergh, 2019](#), [Sin et al., 2022](#)].

# Research Question

Can the gender differences in bargaining returns outcomes for men and women be explained by women responding differently to roles in the labor market?

# Employee/Employer Bargaining game

Alternating offer game with assigned roles attempting to split a pot of money. Intended to be run on campus, but Covid-19

# Experimental Procedure

1. Assigned a Role
  - No difference in information
  - “employers will split the earnings with the employee”
2. Negotiation Period
3. Complete Survey

# Key Outcome

What share did I negotiate?

# Subject Recruitment

93 men and 99 women: half from WYSAC half from Teton Lab

# Key Result

1. Men and Women Respond Differently to Their Assigned Roles

# Data

Group	Agreement Amount	Number of Observations
Male Employee	51.108 (9.429)	359
Male Employer	50.885 (9.676)	463
Female Employee	47.765 (10.306)	512
Female Employer	50.789 (10.757)	410

**Table:** Summary of Outcome Variables

## Key Result Driver

- Female employees are more risk averse than female employers
- No difference between roles in risk preferences for men.

## Potential Explanation

- Women are more responsive to social cues than men [Ellingsen et al., 2013, Lotz, 2014, Espinosa and Kovářík, 2015]
- Employees have less bargaining power [Krueger, 2018, Mishel, 2020, Cauvel and Pacitti, 2022]

# Takeaway Lessons

1. Gender Gap for Employees, But Not for Employers
2. Result Driven by Role Responsiveness of Women

# Posted-Offer Employment System

What if you can't negotiate your salary?  
What if you are offered less than you asked?

# Motivation for Experiment

In a posted-offer employment system, any gender differences is not motivated by negotiation returns, but could be response to uncertainty.

# Chosen Experimental Tool

## The ultimatum game

- Proposer (Employer) proposes a split of \$10
- Respondent (Employee) accepts or declines

# Experimental Treatment

1. Certainty: 1 responder
2. Competition: 3 responder
3. Uncertain Competition: 50% 3 responders, 50% 1 responder

# Outcome Variable

1. Acceptance Rate
2. Average Offer

# Subject Recruitment

Qualtrics: 287 proposers and 642 responders

# Key Results

1. No Change in Average Offer
2. Uncertain Competition lead to the Most Accepted Offers

# Key Result Driver

## Respondents facing uncertainty

- Accept unfair offers (less than \$5)
- Must Earn Money

# Extensions of Current Papers

Continue to add realism to experimental realm

- Role and the Gender Wage Gap
  - Empower Employees
  - Vary Roles
- Uncertain Levels of Competition
  - Allow for Interview
  - Respondent Competition

# Research Agenda Continuation

Borrow from Dr. John List's playbook and take it to the field.

# Thank You!

## Any Questions?

# References I

Anne Alexander and Chian Jones-Ritten. *The Wage Gap in Wyoming*. 2023.

David Card, Ana Rute Cardoso, and Patrick Kline. Bargaining, Sorting, and the Gender Wage Gap: Quantifying the Impact of Firms on the Relative Pay of Women \*. *The Quarterly Journal of Economics*, 131(2):633–686, 10 2015. ISSN 0033-5533. doi: 10.1093/qje/qjv038. URL <https://doi.org/10.1093/qje/qjv038>.

Michael Cauvel and Aaron Pacitti. Bargaining power, structural change, and the falling u.s. labor share. *Structural Change and Economic Dynamics*, 60:512–530, 2022. ISSN 0954-349X. doi: <https://doi.org/10.1016/j.strueco.2022.01.007>. URL <https://www.sciencedirect.com/science/article/pii/S0954349X22000078>.

## References II

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Lawrence Mishel. Centering unequal bargaining power in workplaces. *LERA For Libraries*, 24(4), 2020.

Jenny Säve-Söderbergh. Gender gaps in salary negotiations: Salary requests and starting salaries in the field. *Journal of Economic Behavior & Organization*, 161:35–51, 2019.

## References IV

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## Key Regressions

Variables	Men	Women
Employee1	0.459 (1.148)	-3.311*** (1.253)
Constant	50.857*** (0.754)	51.14*** (0.935)
Observations	777	877
Number of Individuals	89	96

Standard errors in parentheses

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$

**Table:** Within Gender Role Difference Regressions

# Key Driver Support

Group	Risk Measurement
Male Employee	4.535 (1.438)
Male Employer	4.532 (1.622)
Female Employee	4.007 (1.733)
Female Employer	4.856 (1.436) <sup>***</sup>

Standard Deviations in parentheses

<sup>\*\*\*</sup>  $p < 0.01$ , <sup>\*\*</sup>  $p < 0.05$ , <sup>\*</sup>  $p < 0.1$

Table: Risk Aversion

**MICROFAUNA ANALYSIS AT THE LA  
PRELE MAMMOTH SITE (48CO1401):  
IMPLICATIONS FOR CLOVIS DIET AND  
PALEOENVIRONMENTS**

**McKenna Litynski**

**SAA Annual Meeting**

**University of Wyoming, Department of  
Anthropology**

**March 31<sup>st</sup>, 2023**



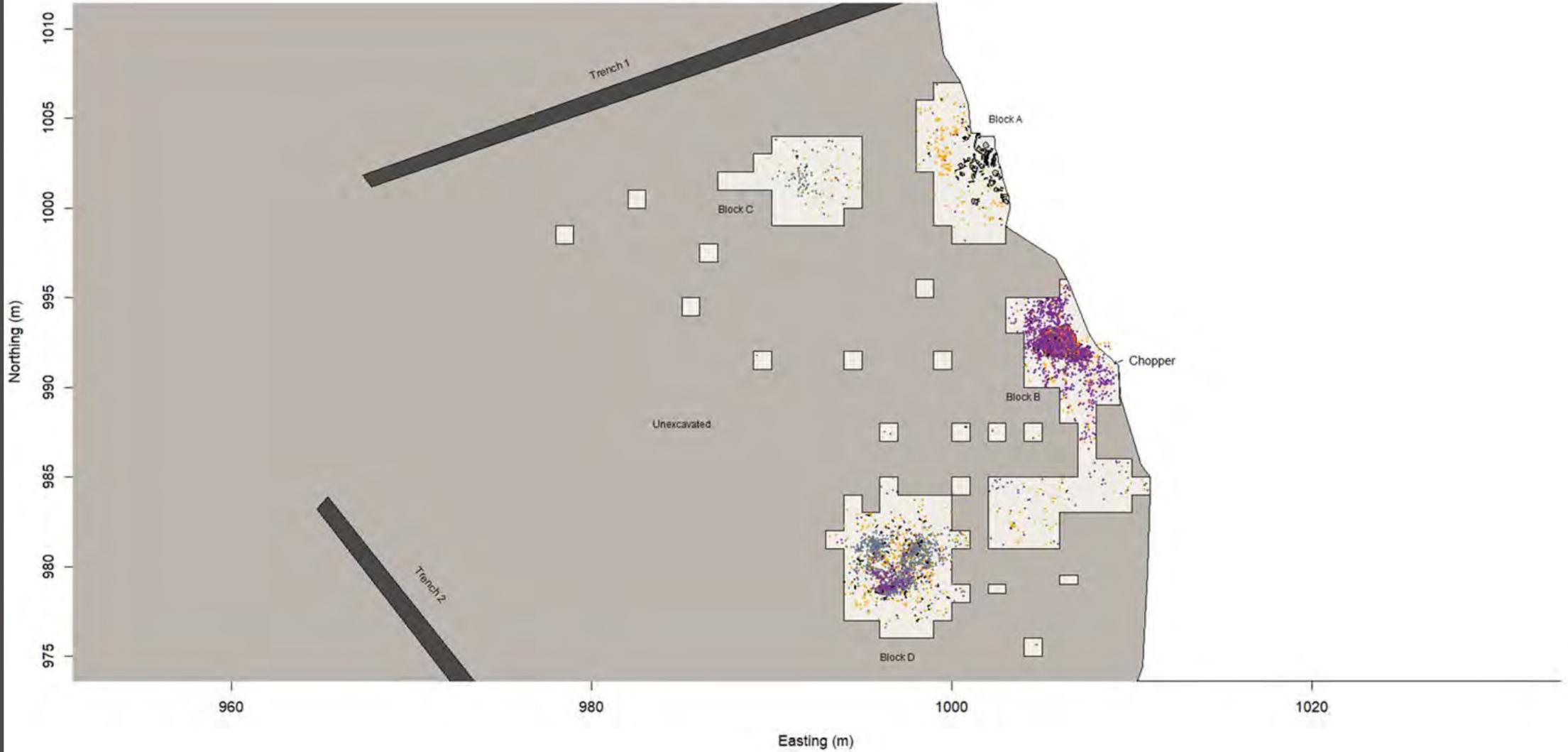


## La Prele Mammoth Site

Clovis tradition: A distinctive fluted projectile point technology that spanned approximately 13,050-12,750 BP.

# La Prele Mammoth Site

La Prele Mammoth Site (48CO1401)



## Primary research goals:

Traditional zooarchaeological techniques provide the opportunity to test whether the microfauna are naturally or culturally associated.

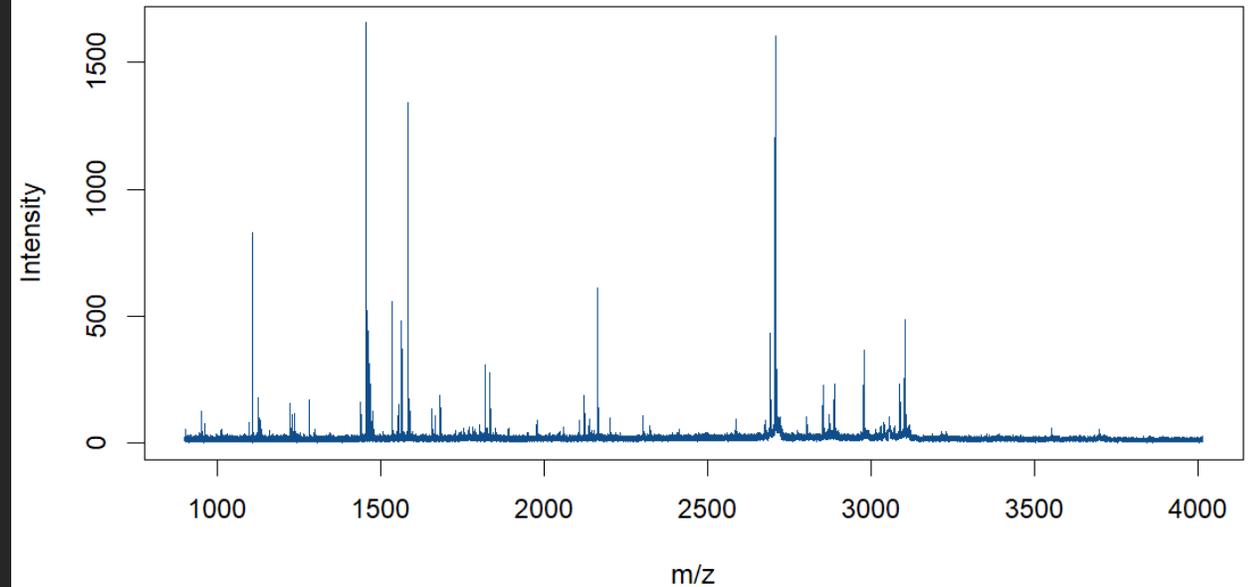
This thesis showcases the potential of proteomics-based methods like Zooarchaeology by Mass Spectrometry (ZooMS) to aid in identifying microfauna taxa at Clovis sites like La Prele.

Analysis of the molars of rodents allow for species level identifications and therefore determining areas of sympatry for certain taxa and drawing inferences about the past environment at La Prele.



FS 10584. Humerus frag. UID animal (probably Aves)

## Montane Shrew



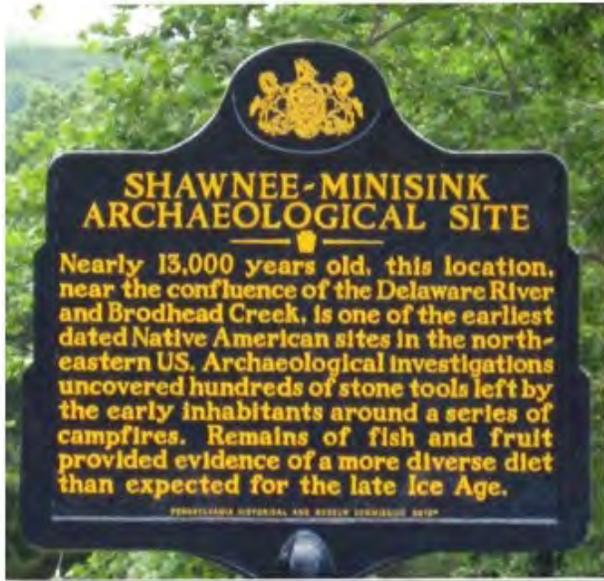


**Clovis Generalist  
Versus Specialist  
Debate**

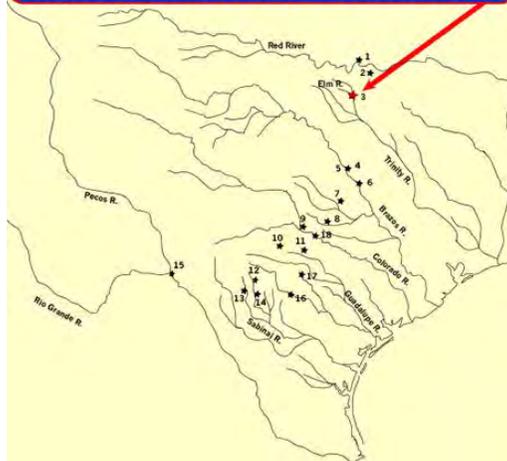


The debate cannot be fully understood without also considering small animals in Clovis contexts.





### Aubrey Archaeological Site Ray Roberts Lake State Park



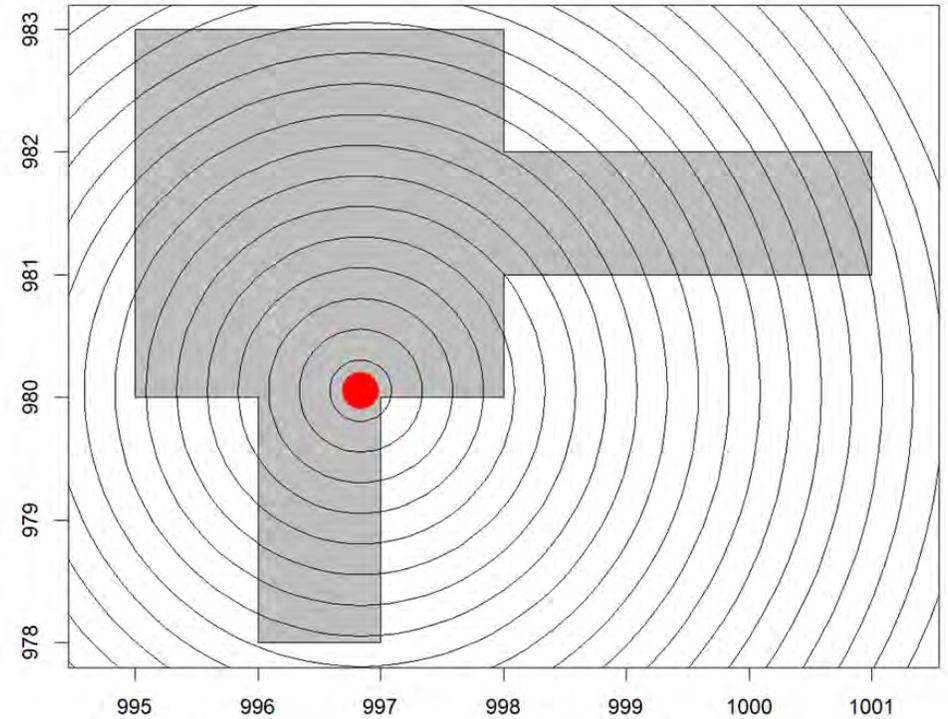
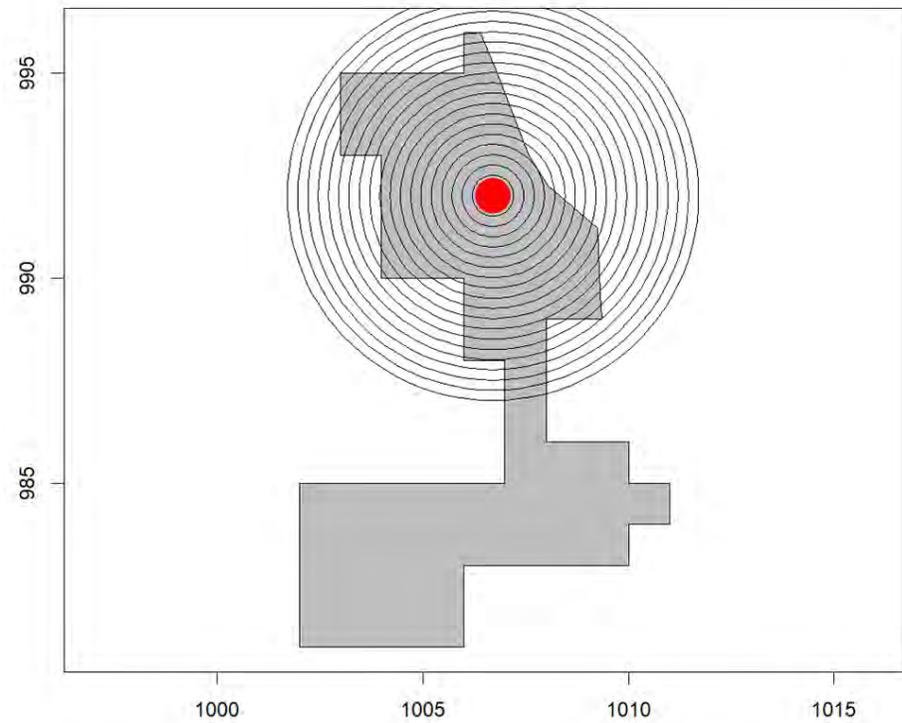
If Clovis subsistence economy at the La Prele Mammoth site included microfauna, or animals the size of a hare or smaller, then both Pleistocene megafauna and microfauna should exhibit strong undeniable evidence for an association with human activity.

# Zooarchaeological Analysis Methods:

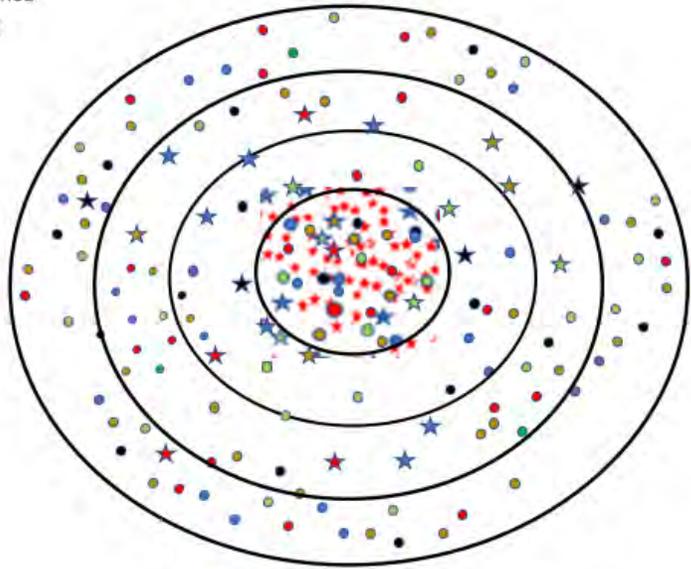
Traditional analysis includes recording NISP, provenience information, skeletal element representation, burning or calcination (including a burning scale), bone condition, and identification of specimens to the lowest taxonomic level possible based on osteological characteristics.



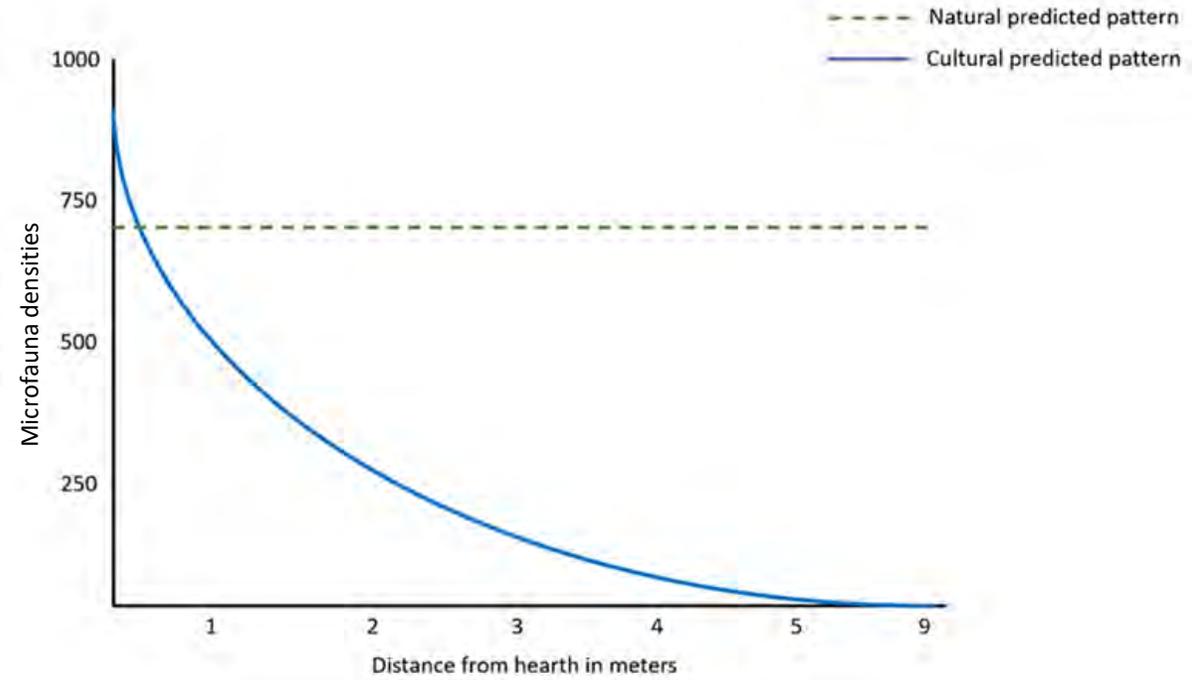
# Spatial Density Analysis



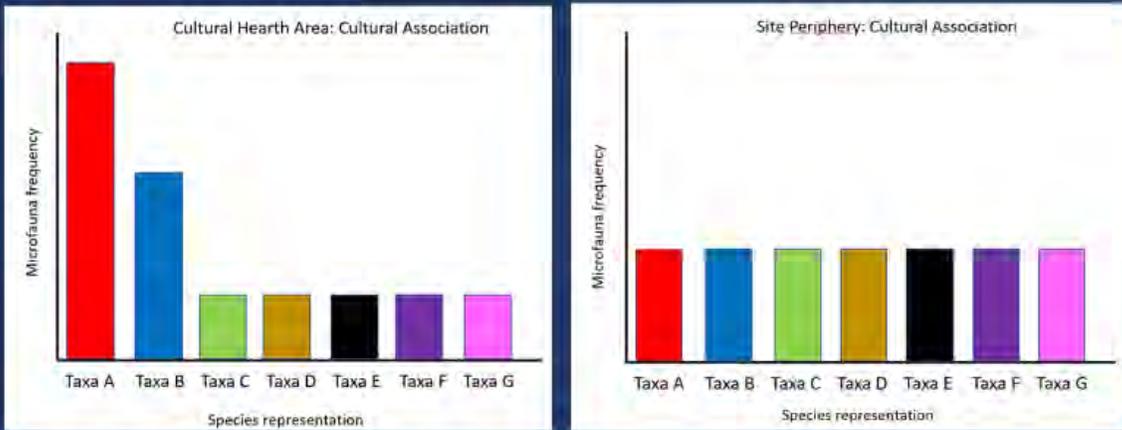
- = Not burned or calcined
- ★ = Burned or calcined



- Red = Taxa A
- Blue = Taxa B
- Green = Taxa C
- Gold = Taxa D
- Black = Taxa E

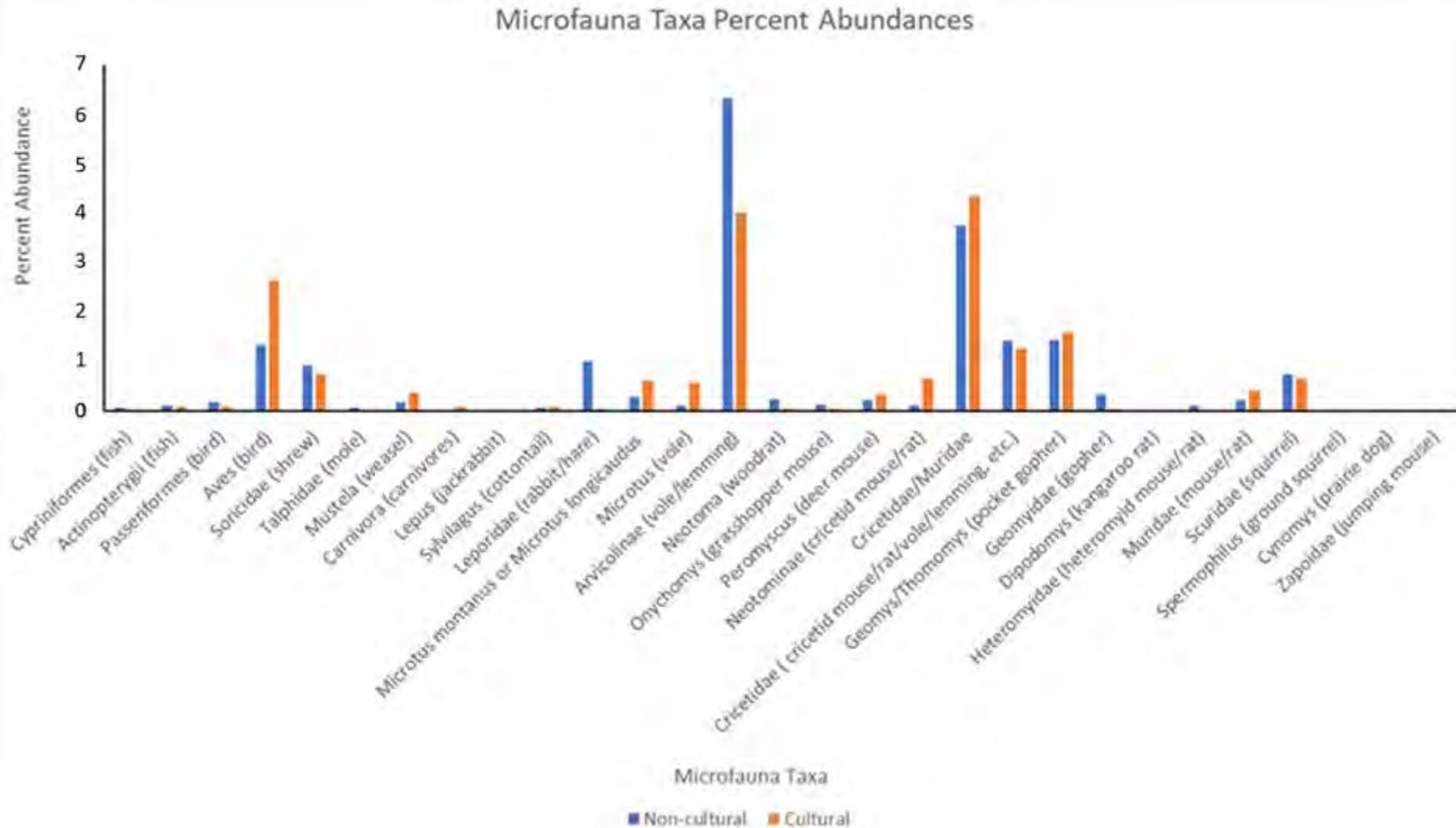


### Site Spatial Analysis

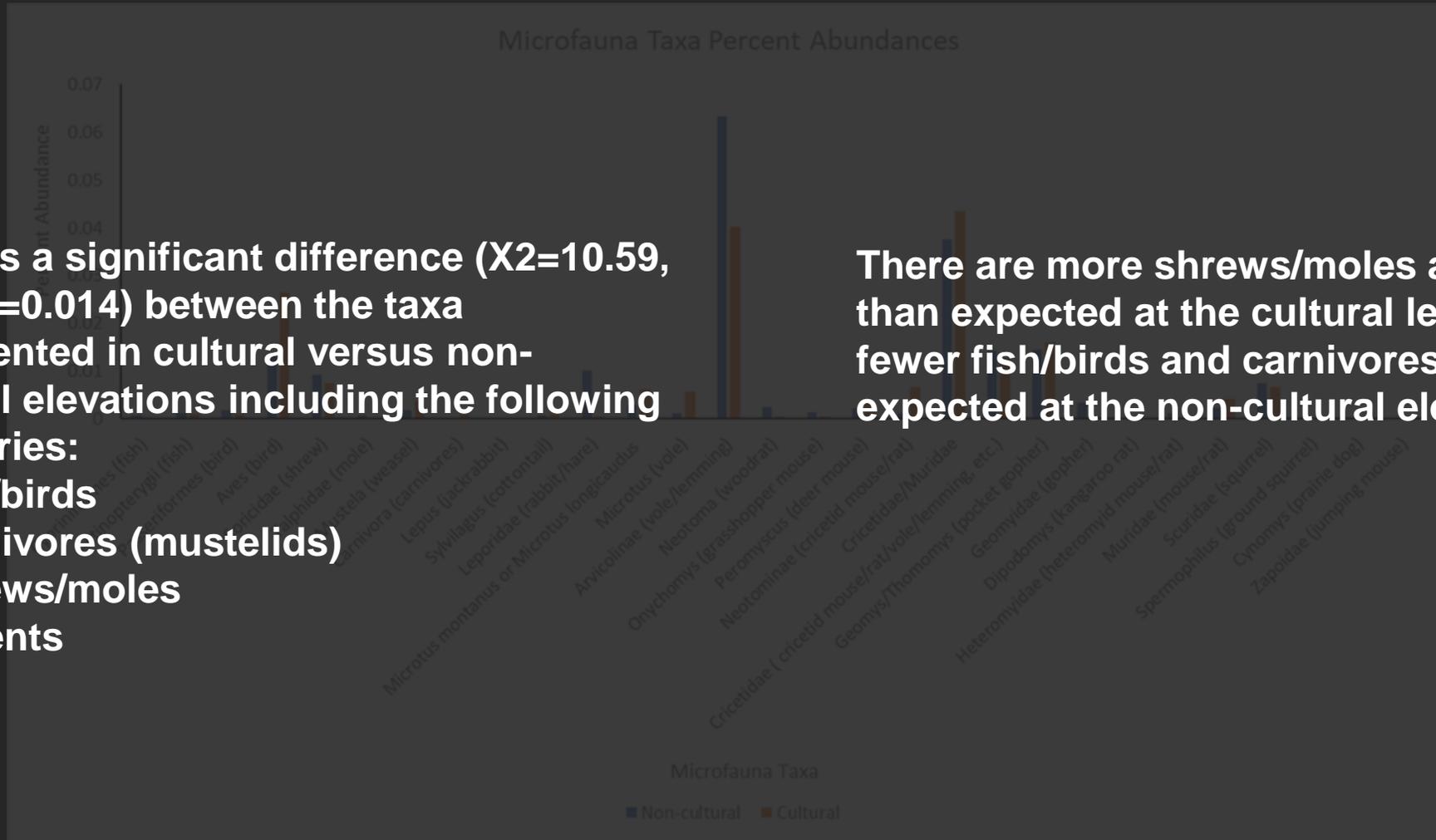


## Traditional Zooarchaeology Expectations

# Traditional Zooarchaeology Results



# Traditional Zooarchaeology Results

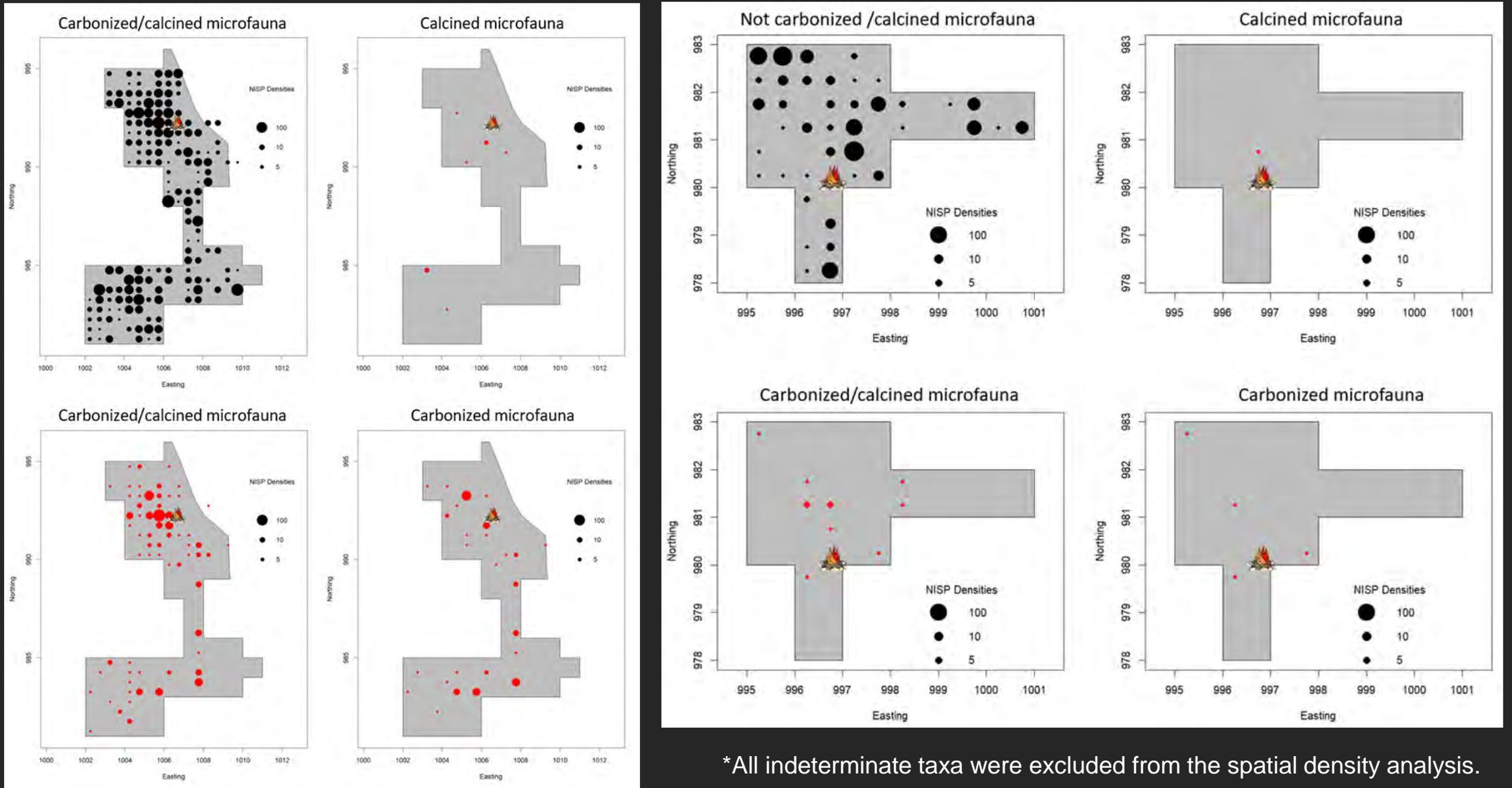


There is a significant difference ( $X^2=10.59$ ,  $df=2$ ,  $p=0.014$ ) between the taxa represented in cultural versus non-cultural elevations including the following categories:

- fish/birds
- carnivores (mustelids)
- shrews/moles
- rodents

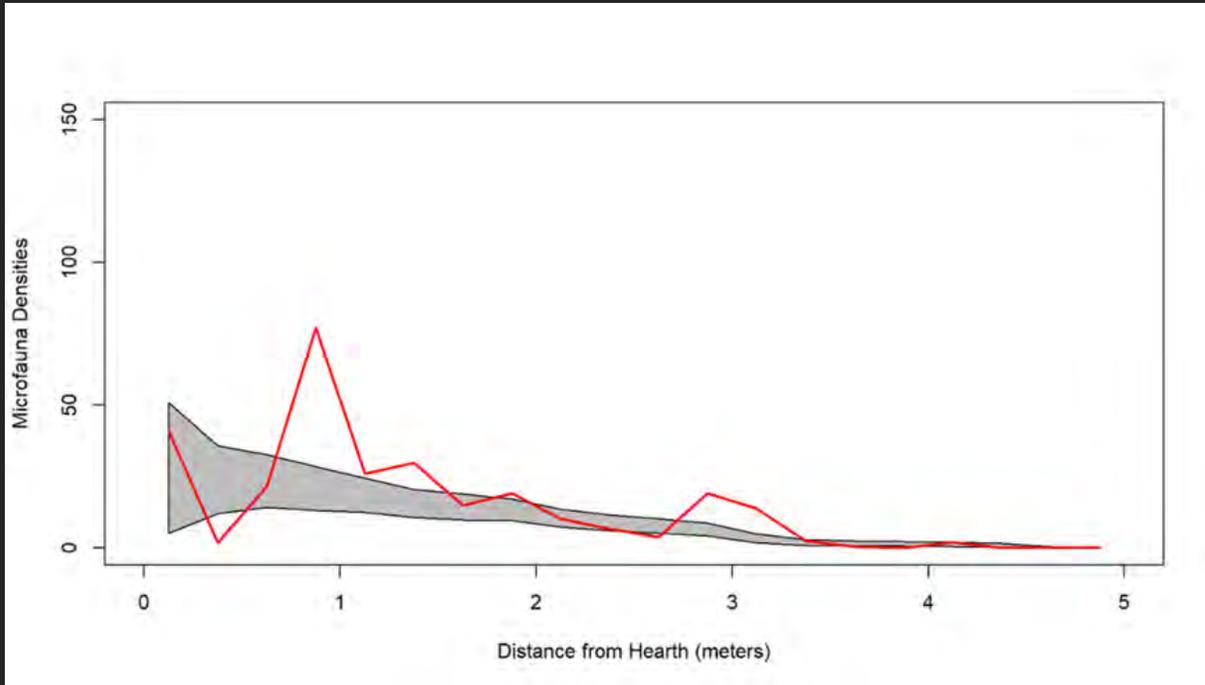
There are more shrews/moles and rodents than expected at the cultural level and fewer fish/birds and carnivores than expected at the non-cultural elevations.

# Traditional Zooarchaeology Results

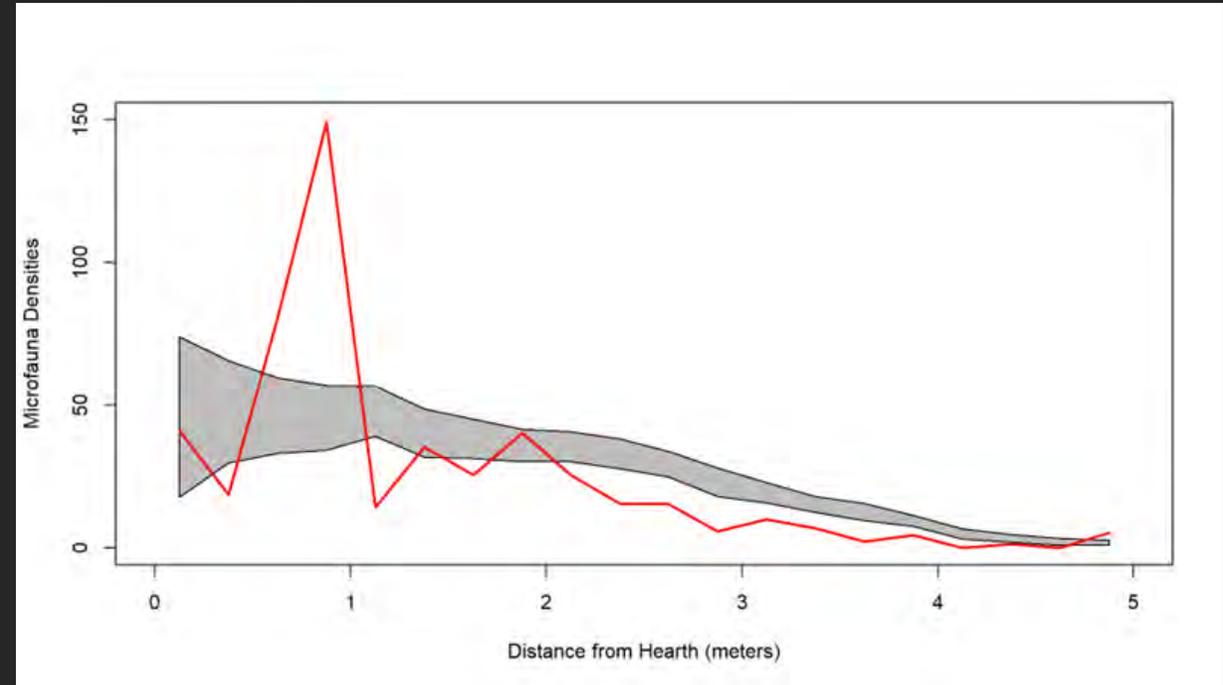


\*All indeterminate taxa were excluded from the spatial density analysis.

# Traditional Zooarchaeology Results



Block D microfauna across all elevations

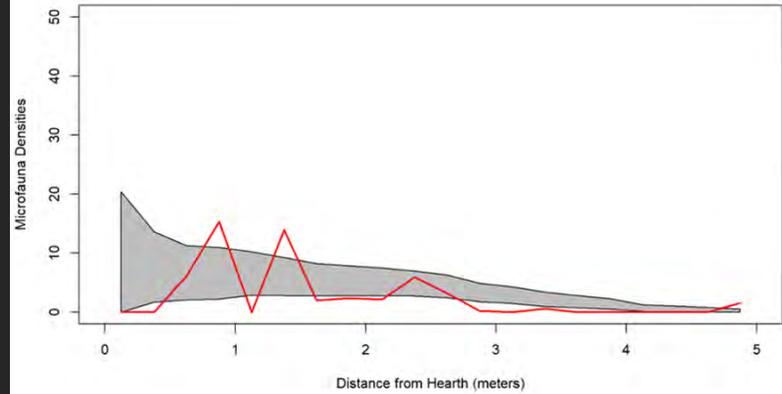


Block B microfauna across all elevations

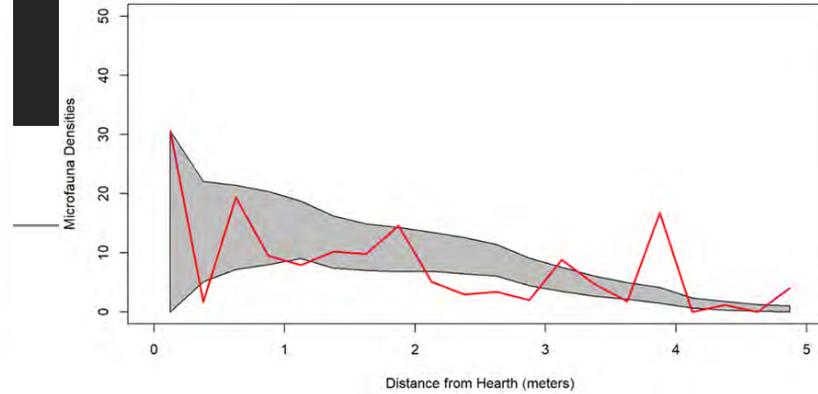
\*All indeterminate taxa were excluded from the spatial density analysis.

# Traditional Zooarchaeology Results

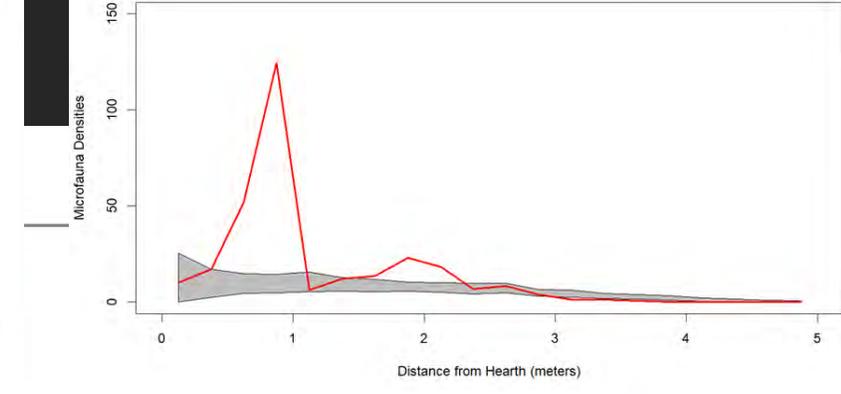
### Block B Above Cultural Occupation



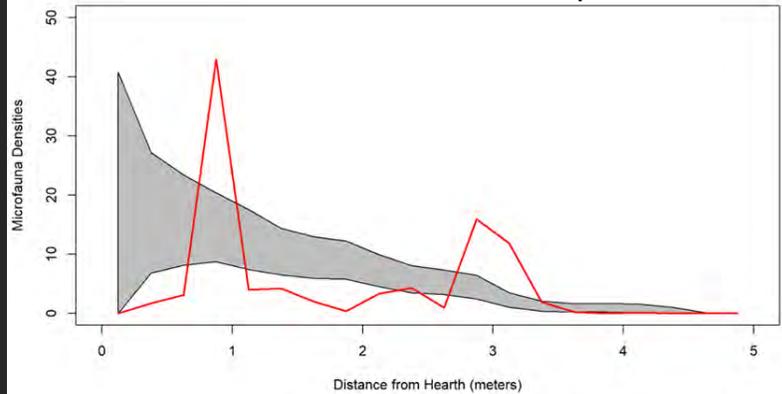
### Block B At Cultural Occupation



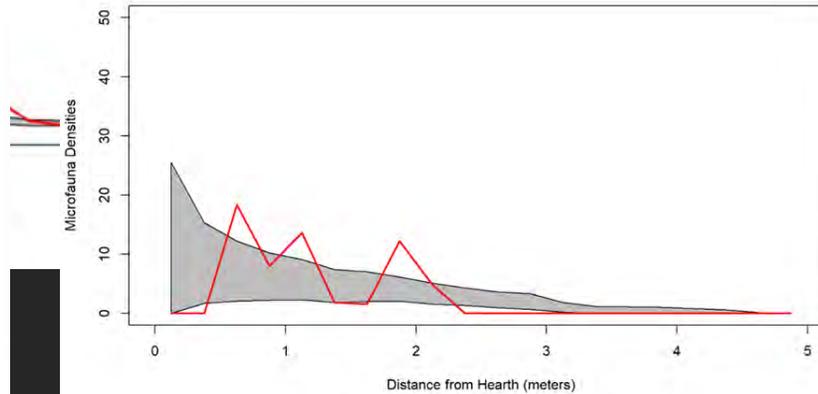
### Block B Below Cultural Occupation



### Block D Above Cultural Occupation



### Block D At Cultural Occupation



### Block D Below Cultural Occupation

Densities of microfauna from Block D below the cultural level could not be determined considering the very small sample size of bones.

\*All indeterminate taxa were excluded from the spatial density analysis.

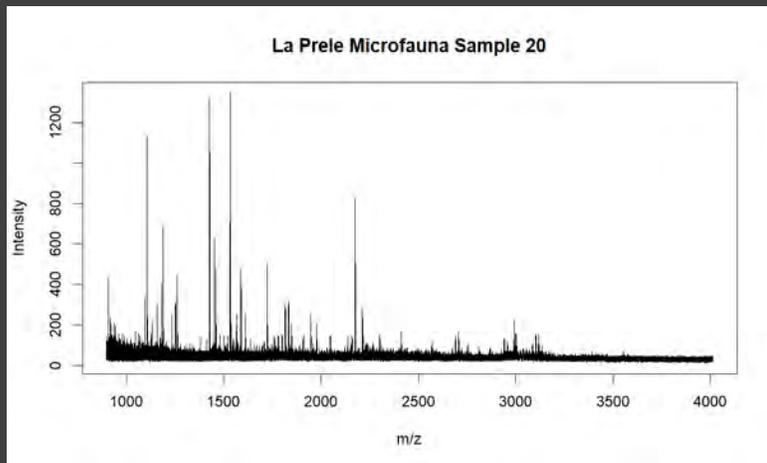
# Major Findings

- **Spatial analyses based on densities in relation to distance away from hearth features at the cultural level deviate from the randomized model to a lesser extent compared with the non-cultural elevations. This implies a natural rather than cultural microfauna association during site occupation.**
- **There is a statistically significant difference between the taxa represented at the cultural level compared with the non-cultural elevations.**
- **Considering clustering of calcined microfauna bone is not present, it is more likely that the burned microfauna bone that exists at La Prele reflects a natural rather than cultural signature.**

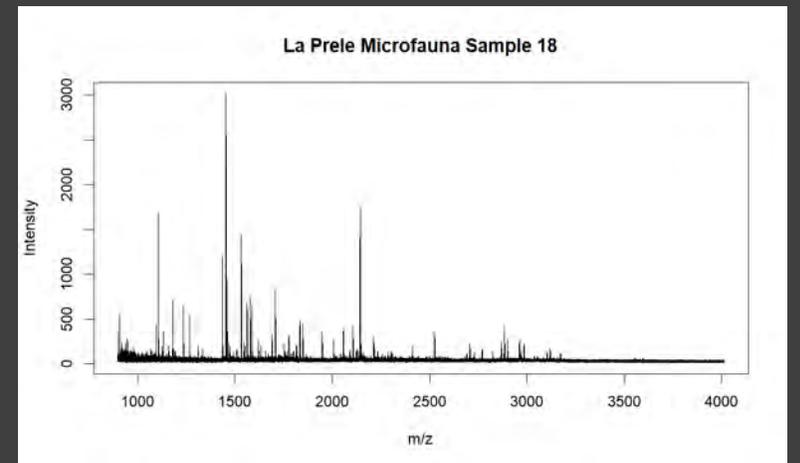
**In summary:**

**Based on the representation of taxa, distribution of burned microfauna, and the ring and sector analysis of microfauna densities from hearth features, the signature indicates a...**

**NATURAL rather than cultural association.**



# Conclusion



# Acknowledgements

Todd Surovell, for believing in me every step of the way and being my mentor, advisor, and R studio/Excel wizard.

Bree Doering, for encouraging me to observe my faunal data from new angles.

Franco Basile, for providing me with the opportunity to use the MALDI-TOF and allowing my research to soar to new and unexpected heights.

Danny Walker, who helped me analyze the rodent molars for this thesis and encouraged me to pursue paleoenvironmental reconstructions at La Prele.

The Frison Institute, for being willing to fund the ZooMS portion of this thesis.

Sarah Allaun and Sebastian Wetherbee, for their help and support in making the ZooMS portion of this thesis a possibility.

All the special people that made my journey as a master's student that much brighter!

# Questions?

Email: [mlitynsk@uwyo.edu](mailto:mlitynsk@uwyo.edu)

# *Constructing a Biopsychosocial Theory of Food Insecurity and Eating Disorders*

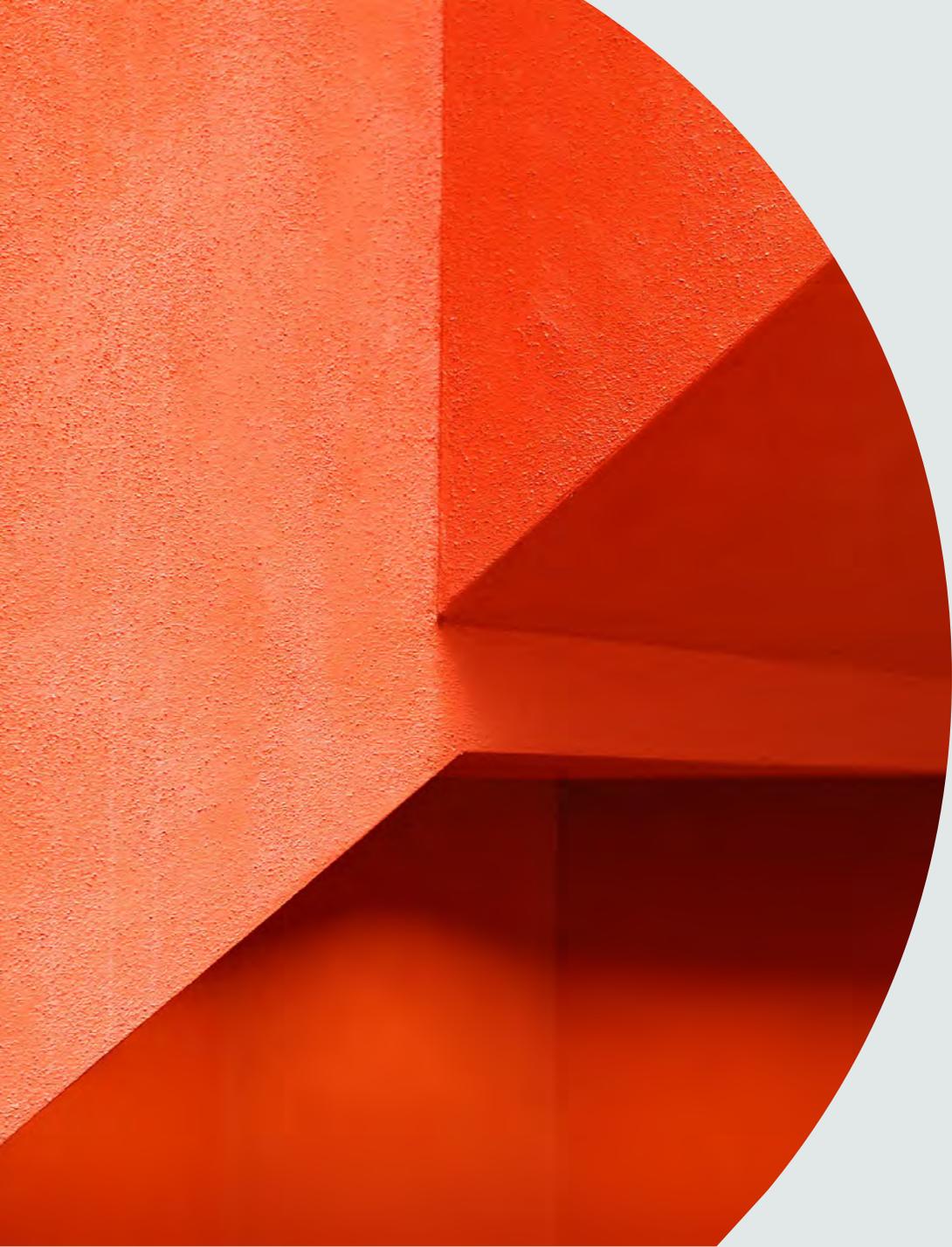
Samantha Spoor, B.S.

Advisor: Kyle De Young, Ph.D.



College of Arts and Sciences  
Department of  
Psychology





# *Overview*

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- Research Program
  - National Science Foundation Project
- 

# Research Program



- What are the impacts of **structural** and **social** determinants of health on eating disorder pathology?
  - Food Insecurity
  - Social Identity
- 
- What **biopsychosocial** factors explain the relations between health disparities and eating pathology?
  - Chronobiology
  - Cognitive functions
  - Sociocultural context

# *Eating Disorder Pathology*

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**Cognitive & behavioral** features of eating disorders



# *Eating Disorder Pathology*

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## ***Cognitions***

- Intentions
- Distortions
- Distress

## ***Behaviors***

- Restriction
- Binge Eating
- Purging

# Research Program



- What are the impacts of **structural** and **social** determinants of health on eating disorder pathology?

- Food Insecurity
- Social Identity

- What **biopsychosocial** factors explain the relations between health disparities and eating pathology?

- Chronobiology
- Cognitive Functions
- Sociocultural context

*Imagine what  
someone with an  
eating disorder  
“looks like”*

---



# *Eating disorder stereotype*

Thin

White

Affluent

Young

Woman

# *Consequences of Narrow Focus on “Who”*

- Causes us to overlook environmental stressors  
→ ***When are people at risk?***
- Limits our understanding of vulnerability for eating disorders  
→ ***Why are they at risk?***



# Research Program



- What are the impacts of **structural** and **social** determinants of health on eating disorder pathology?

- Food Insecurity
- Social Identity

- What **biopsychosocial** factors explain the relations between health disparities and eating pathology?

- Chronobiology
- Cognitive Function
- Sociocultural context

# *Food Insecurity*

Lacking **consistent** access to sufficient food necessary to live a healthy life<sup>1</sup>



<sup>1</sup>Coleman-Jensen et al. (2019). U.S. Dept Agriculture.



# *College Food Access Climate*

---

*~20% of college students in the U.S. are food insecure <sup>2</sup>*

*Food insecurity is associated with:*

- Eating disorder pathology <sup>3</sup>*
- Depression, anxiety, stress <sup>4</sup>*
- Cognitive dysfunction <sup>5</sup>*

# Research Program



- What are the impacts of **structural** and **social** determinants of health on eating disorder pathology?
- Food Insecurity
- Social Identity

- What **biopsychosocial** factors explain the relations between health disparities and eating pathology?
- Chronobiology
- Cognitive Function
- Social context

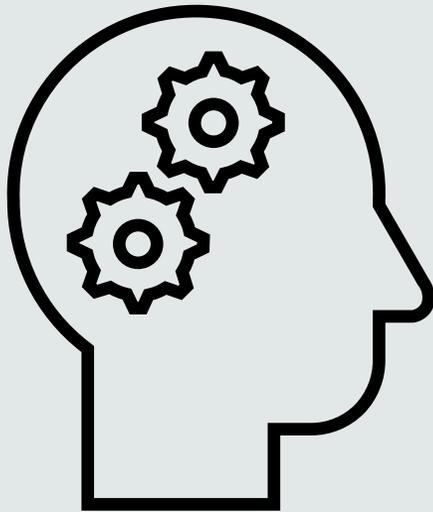


# *Chronobiology*

Within (homeostatic) and between-day (circadian) rhythms:

- (1) sleep
- (2) eating pattern

# *Chronobiology: Eating Behaviors & Cognitive Functions*



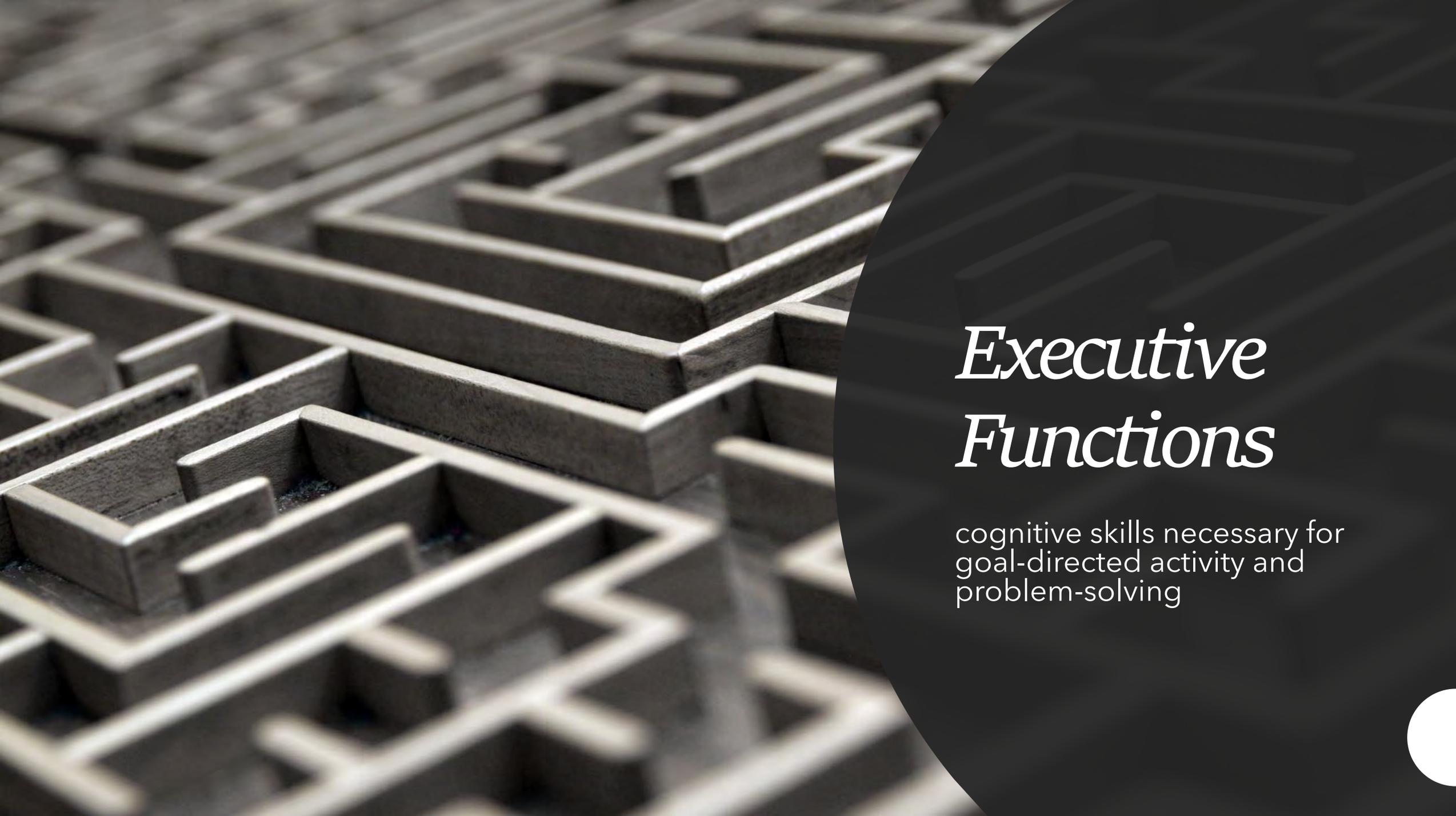
Circadian dysregulation associated with:

- Delayed within-day eating & evening overconsumption<sup>6</sup>
- Executive Function (EF) deficits<sup>5</sup>

*Working memory*

*Cognitive inhibition*

*Cognitive flexibility*



# *Executive Functions*

cognitive skills necessary for  
goal-directed activity and  
problem-solving

# *Testing a Chronobiological Model of College Student Food Insecurity and Executive Function*

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National Science Foundation  
Graduate Research Fellowship (NSF GRFP)



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College of Arts and Sciences  
Department of  
Psychology



# *College Environment*

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- High cognitive burden
- Disrupted chronobiological rhythms
  - sleep*
  - social activities*
  - eating*



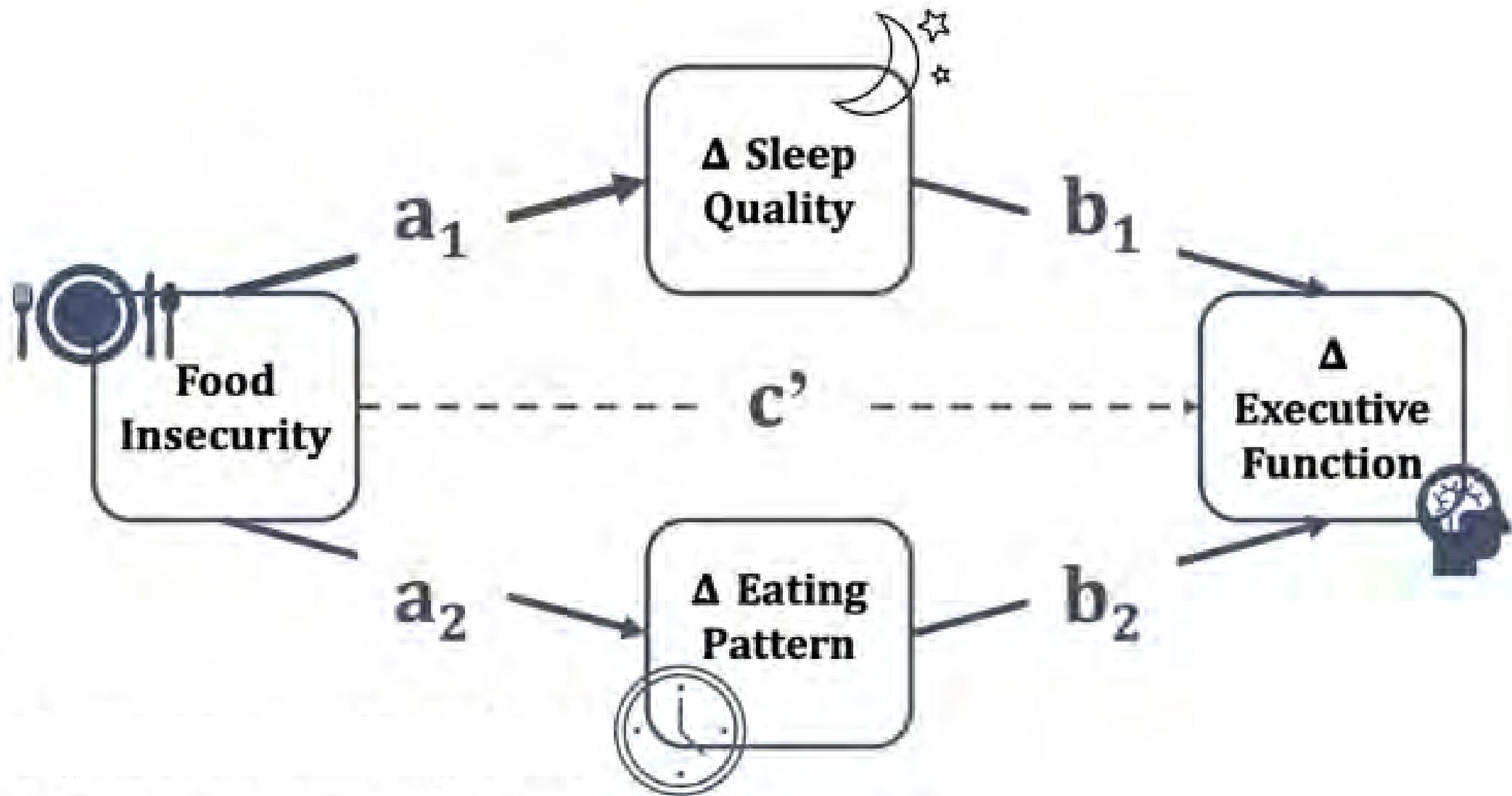
# *Study Aims*

## ***Aim 1***

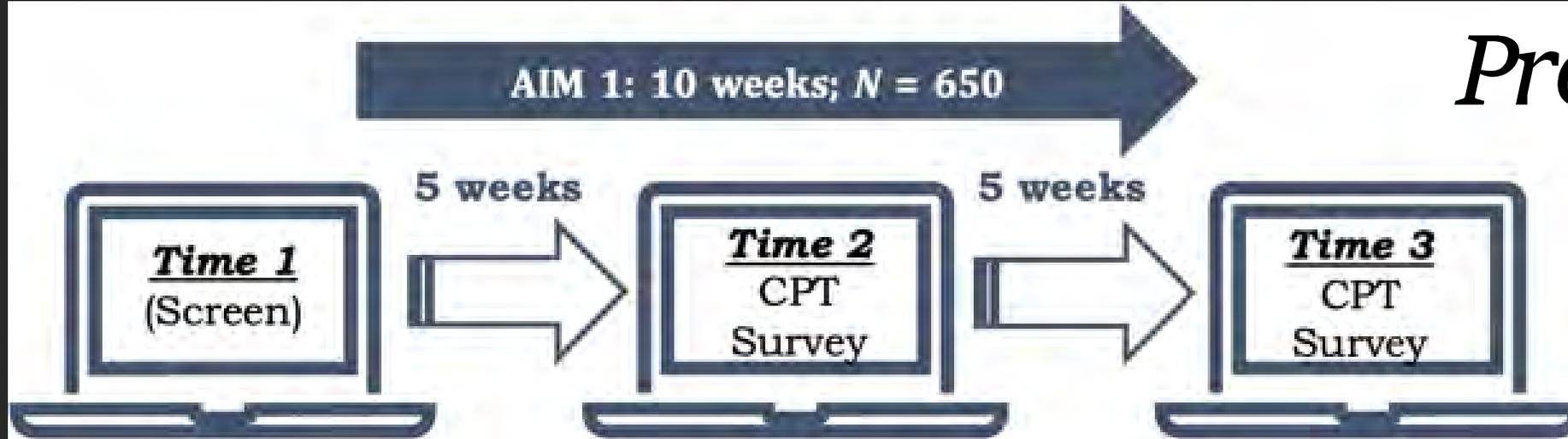
- Test if chronobiological disruption *explains* the association between food insecurity and executive dysfunction among undergraduates

## ***Aim 2***

- Examine bidirectional within- and between -day associations between food insecurity, sleep, eating, and executive functions among undergraduates with food insecurity



# *Procedure.*



Continuous performance task (CPT): Executive functions

Survey: Food insecurity, eating pattern, sleep

# *Study Aims*

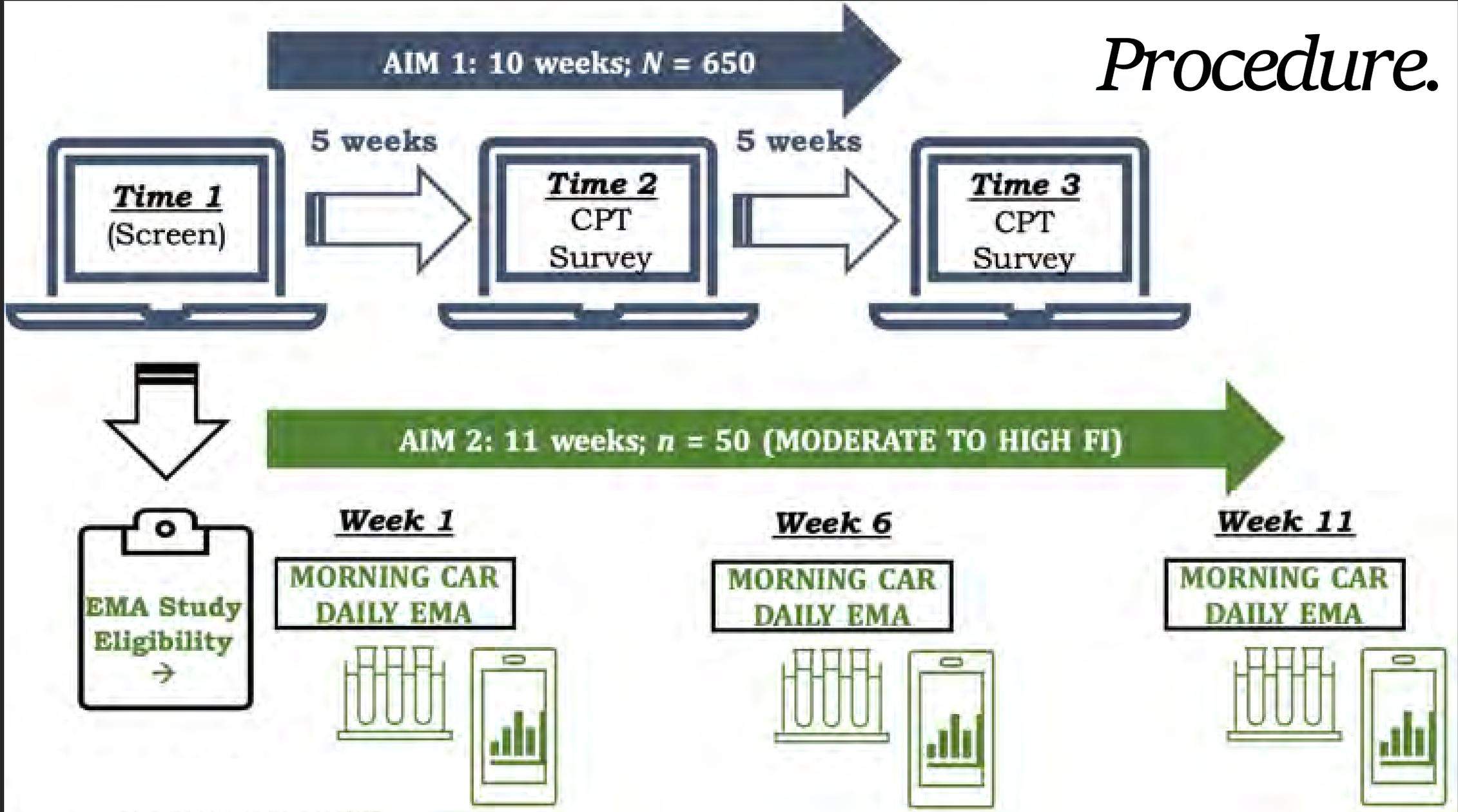
## *Aim 1*

- Test if chronobiological disruption explains the association between food insecurity and executive dysfunction among undergraduates

## **Aim 2**

- Examine bidirectional within - and between-day associations between food insecurity, sleep, eating, and executive functions among undergraduates with food insecurity

# Procedure.



# *Broader Impacts*

- **Reduce food insecurity prevalence**
  - Utilization of university food access programs
  - Timing of food access delivery
  - Academic performance & STEM retention
  - Reduce anxiety, depression, stress
  - *Eating disorder prevention?*



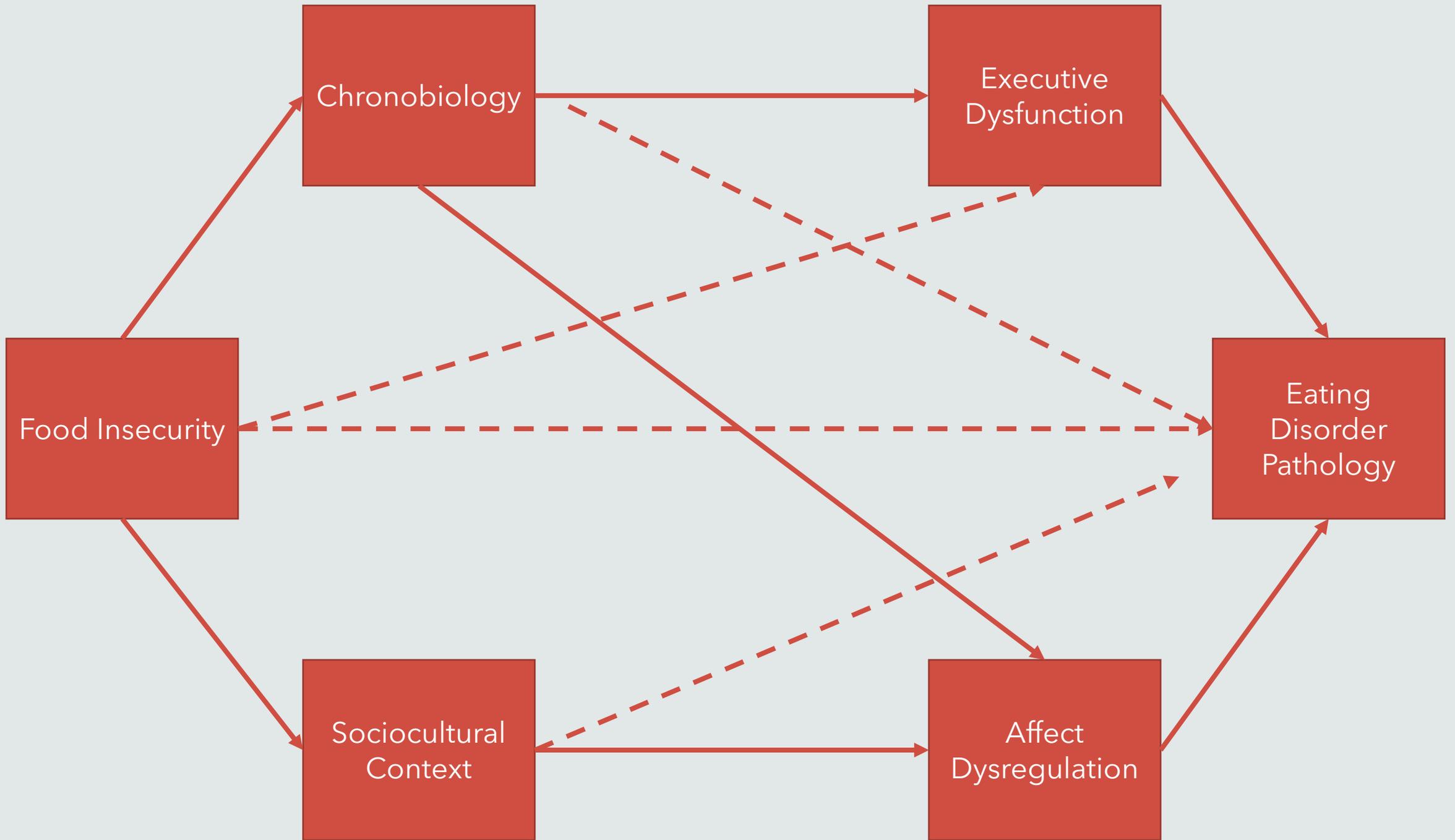
# *Research Program: Future Directions*



- What **biopsychosocial** factors explain the relations between health disparities on eating pathology?

- Chronobiology
- Cognitive functions
- Sociocultural context







UNIVERSITY  
OF WYOMING

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College of Arts and Sciences  
Department of  
Psychology

*Thank you!*

---

Correspondence: [sspoor@uwyo.edu](mailto:sspoor@uwyo.edu)

# RESEARCH AND ECONOMIC DEVELOPMENT COMMITTEE

## COMMITTEE MEETING MATERIALS

**AGENDA ITEM TITLE: RED Division Updates – Parag Chitnis, Steve Farkas, Bryant Smalley**

- PUBLIC SESSION
- EXECUTIVE SESSION

PREVIOUSLY DISCUSSED BY COMMITTEE:

- Yes
- No

FOR FULL BOARD CONSIDERATION:

- Yes *[Note: If yes, materials will also be included in the full UW Board of Trustee report.]*
  - No
- Attachments/materials are provided in advance of the meeting.*

EXECUTIVE SUMMARY:

Vice President Parag Chitnis will provide opening remarks and Associate Vice Presidents Steve Farkas and Bryant Smalley will give updates on a variety of topics within the Division of Research and Economic Development.

PRIOR RELATED BOARD DISCUSSIONS/ACTIONS:

WHY THIS ITEM IS BEFORE THE COMMITTEE: Informational update

ACTION REQUIRED AT THIS COMMITTEE MEETING: N/A

PROPOSED MOTION:

N/A

# Economic Development Updates

**Board of Trustees**

**May 11, 2023**



# Agenda

- WIP Phase 2 – Discussion
- Center for Entrepreneurship and Innovation + College of Business
- Faculty Fellows' Economic Development Projects
- Technology Transfer Office reset



# WIP Phase 2 - Discussion

- Programmatic areas
- Investments
- UW Led



# Center for Entrepreneurship and Innovation + College of Business - Collaboration

INITIATIVE	SUMMARY
1. Entrepreneurship Education & Research Committee	Faculty teaching and research fellowships, on-site workshops
2.A. Enrollment & Engagement Focused Marketing Strategy	Comprehensive strategy to promote enrollment in entrepreneurship programming throughout campus, and participation in associated non-curricular events.
2.B. Grad Certificate Tuition Scholarships	Tuition scholarships for non-business graduate students to join the new Graduate Certificate in Entrepreneurship & Innovation
3. Entrepreneur-In-Residence (EIR) Programming	Additional resources to extend wider campus access to the EIRs being brought to Laramie by The Venture MBA
4. Graduate Business Consulting Practicum	Establish an elective graduate class to house company and community engaged experiential consulting and learning projects.
5. MBA in Residence Program	Establish graduate assistantships and internships for MBA students to become embedded assets in the BRN and other entrepreneurial entities in Wyoming.
6. Enhancing Innovation Funding Events: Fisher & Ellbogen	Establish a task force in collaboration with IMPACT 307 to enhance pitch competitions and develop a proposal for a culminating statewide event fed from extant regional events.



# Faculty Fellows Program

- Carbon Monitoring, Verifying, Tracking, and Tokenizing using Blockchain
  - Soheil Saraji – SER
- Establishing strategic Public-Private Partnerships (PPPs) for the development and operation of research park and innovation districts
  - Charlie Zhang – College of Engineering
- Wyoming Wool Initiative Product Investigations
  - Jennifer Harmon - Family and Consumer Sciences
- Corporate Relations Model
  - Ben Cook – College of Business



# Tech Transfer Office - Reset

- Departures
  - Office Director
  - Licensing Director
- Transition
  - Andy Applegate - Technology Transfer Manager
  - General Counsel Office
  - Consultant
    - Internal / External Review
    - Best practices
    - Organizational recommendations
  - Outside IP Counsel – Patterson / Sheridan
- Interim Solution (12 months – effective April 17, 2023)
  - “APIOiX – Innovation Transfer : Arundeeep Pradhan, President



# Discussion



# Improving Processes and Procedures to Enhance Research Productivity

University of Wyoming Board of Trustees  
Research and Economic Development Committee

May 10, 2023



UNIVERSITY  
OF WYOMING

Research and  
Economic Development

# Goal

- The Research and Economic Development Division (REDD) is committed to supporting the growth and expansion of the research enterprise at the University of Wyoming.
- To ensure our processes and procedures maximally advance that goal, we have formed three new committees that are examining specific topic areas to create faculty-driven recommendations to improve efficiencies, reduce administrative burden, and maximize impact.



# New Committees

- **Contracted Services Advisory Committee**
  - Skill- and deliverable-based contracts that are often time-sensitive and limited in scope
- **Faculty Startup Process Advisory Committee**
  - Financial support provided to new faculty to help them establish their research upon joining UW faculty
- **Research Core Facilities Task Force**
  - High-tech resources centralized at the University level to make them available to researchers across campus



# Contracted Services

- **Charge**

- Responsible for reviewing current processes and procedures for submitting and approving contracted services and making recommendations for ways to streamline that process

- **Intent**

- More efficiently engage with industry and other agencies to engage in contracted services
- Better support faculty who engage in contracted services work



# Contracted Services

- **Preliminary Recommendations**

- Refine communication and interaction between REDD and faculty for these time-sensitive proposals
- Explore opportunities for expedited review and/or automatic approval for certain contracted services proposals (e.g., templates)
- Improve billing and invoicing procedures to align with rapid pace
- Expand staff support within REDD designated to support contracted services/contract negotiation



# Faculty Startup

- **Charge**

- Responsible for reviewing current processes and procedures for requesting and expending faculty startup packages and making recommendations for ways to streamline that process

- **Intent**

- Simplify the process by which units request startup for incoming faculty members (important for offers)
- Improve procedures for expending startup funds



# Faculty Startup

- **Preliminary Recommendations**

- Expand ways in which startup funds can be spent
- Eliminate threshold below which REDD will not contribute (\$50K)
- Allow for adjusting startup budgets as researchers identify changing needs
- Increase the speed of startup approval requests
- Explore the possibility of setting automatic startup request approval criteria (e.g., below a certain threshold)



# Core Facilities

- Recently formed
- **Charge**
  - Responsible for creating a strategic and operations plan that will define the successful growth and administration of REDD's core facilities to maximize the impact of and access to advanced research instrumentation
- **Intent**
  - Maximizing impact and sustainability of core facilities
  - Developing a strategy for expansion of core facilities



# Core Facilities

- **Anticipated Focal Areas**

- Improving the administrative structure and policies governing REDD's core facilities
- Developing a strategy to guide the creation, financial support, and sustainability of REDD's core facilities (e.g., revenue generation)
- Creating an approach for collective and efficient operation and management of REDD's core facilities



## Intent and Charge for New REDD Committees

- **Contracted Services Advisory Committee**
  - Intent: In addition to traditional investigator-initiated research, REDD encourages and supports engagement in industry-sponsored contract work (e.g., execution of contracted tasks/services that typically follow a standard rate sheet or formula-driven budget). Such work presents opportunities to support industry and other agencies with tasks the University possesses expertise in, while also generating new revenue streams to the University. Such work often requires fast turnaround times and it is important to have streamlined procedures for reviewing and approving such work.
  - Charge: The committee will be responsible for reviewing current processes and procedures for submitting and approving contracted services, and making recommendations for ways to streamline that process.
- **Faculty Startup Process Advisory Committee**
  - Intent: REDD financially supports faculty startup packages in collaboration with academic Colleges and Schools. As UW continues to progress toward R1 status, creating systems that streamline and simplify the awarding and management of startup funds will be essential in scaling research at the University and in attracting top research talent to the University.
  - Charge: The committee will be responsible for reviewing current processes and procedures for requesting and expending faculty startup packages and making recommendations for ways to streamline that process.
- **Research Core Facilities Task Force**
  - Intent: Numerous benefits derive from managing research instrumentation in shared core facilities, e.g., in-house spending of external research funding, improved efficiency of sample analysis (lower costs and increased turnaround time), and opportunities for new method development enhancing the research capabilities of UW. The REDD oversees several instrument core facilities operated as research service centers. These facilities currently operate independently but share a common mission and have similar demands for operation, financial accounting, marketing, and compliance.
  - Charge: The task force will be responsible for creating a strategic and operations plan that will define the successful growth and administration of REDD's core facilities to maximize the impact of and access to advanced research instrumentation.